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ORGAN OF THE AMERICAN ASSOCIATION OF THE HISTORY OF MEDICINE
AND THE JOHNS HOPKINS INSTITUTE OF THE HISTORY OF MEDICINE

Editor—HENRY E. SIGERIST

Associate Editor—GENEVIEVE MILLER

VOLUME XIX FEBRUARY, 1946 NUMBER 2

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UR OF THE CHALDEES
AND THE
INFLUENCE OF ABRAHAM ON THE HISTORY OF MEDICINE.*

WILDER PENFIELD

It seems proper that an address which is given to commemorate Sir William Osler should be devoted to some phase of his life or, failing that, should deal with a subject that lies within the field of his special interest and which might have won his approval. My own recollections of him have already been recorded[1] and so I would choose the second alternative.

At the outset, however, allow me to refer briefly to his personality for it was this, as much as his medical contributions, which made Osler unique; and it is this that is most easily lost to posterity.

As I remember him during the closing years of his life at Oxford he was spare, quick-moving, of medium size, with olive skin, drooping moustache and twinkling eye. The first impression that he gave to a stranger was that here was a simple, warm-hearted individual. Yet he was often

* Address delivered at the Annual Banquet of the McGill University Osler Society under the presidency of Mr. William Feindel, April 12th, 1945.

From the Department of Neurology and Neurosurgery, McGill University, and the Montreal Neurological Institute.

[1] Address to the Osler Society, University of Western Ontario, 1941.

brilliant in conversation and always wise. He was a scholar, writer, clinician, teacher and host whose greatness never made him cease to love laughter and puckish pranks.

In the field of the history of medicine Osler delighted to see new ground broken. Forgive me, therefore, if in an effort to find comparatively new ground, I carry you back 4,000 years. The following quotation, which is given with certain omissions, is from Genesis:

XI, 26 "And Terah . . . begat Abram, Nahor and Haran . . . and Haran begat Lot.
28 And Haran died before his father Terah in the land of his nativity, Ur of the Chaldees.
29 And Abram and Nahor took them wives: the name of Abram's wife was Sarai . . .
30 But Sarai was barren; she had no child.
31 And Terah took Abram his son, and Lot. . . and Sarai his daughter-in-law . . . and they went forth with them from Ur of the Chaldees, to go into the land of Canaan . . .
32 . . . and Terah died in Haran.
XII, 5 And Abram took Sarai his wife and Lot his brother's son, . . . and they went forth into the land of Canaan and into the land of Canaan they came."

With these lines the curtain rises on the drama of Hebrew history. Abram, father of the Jewish, the Christian and the Mohammedan religions, was fleeing from the land of his nativity, a land called by the writer of Genesis "Chaldea," but known to Abram as Sumer. Sumer was situated at the head of the Persian Gulf in the rich delta formed by the Tigris and Euphrates rivers. Here civilization was already more than three thousand years old, and during that time this people had, among other things, invented and developed the art of writing. But, in the delta of the Nile, there was another flourishing kingdom whose civilization was very old when Abram was born.

In both nations, Egypt and Sumer, the practice of medicine, surgery and sorcery had been elaborated into a complicated system. Sorcery and magic as a cure for human ills depended upon the belief that disease was due to the malignant influence of gods and evil spirits. Some had to be frightened away; others placated, and for each purpose there were special formulas.

Consequently, belief in one God, which Abram may be said to have introduced, automatically banished for his people a whole pantheon of pathology and made obsolete at one stroke a system of therapy by incan-

tation. This left only the useful practices of medical and surgical treatment and, at the same time, it prepared the stage for hygiene and preventive medicine.

It is true that the God of Abraham continued to send plagues down upon the enemies of his chosen people, and He closed the wombs of the women of the house of Abimelech until that monarch should give back the beautiful Sarah to Abraham. It is true that Jehovah still delighted in burnt offerings as had the gods of Sumer whom Abram had known so well in his youth. But, from now on, disease and suffering were to be considered by the Hebrew people as a penalty for misbehaviour imposed by the one God; and health the reward of good conduct.

In July 1943, at an airport not far from Bagdad, it was my good fortune to be greeted by the news that my onward passage would be delayed a fortnight. Not many days later I found myself at the site of the excavations of Ur, standing on the top of the Ziggurat, a hill once built for and dedicated to the moon god. It was dawn, and the first rays of the sun lit up the completely flat surface of a desert for miles around. The light fell full upon the little plateau below me in which this city had remained hidden for nearly 4,000 years.[2]

With the exception of my companion[3] and the drivers of the army truck that had brought us, there was no human being for miles around. A hyaena ran out of a pit into the sunlight, looked about him and then galloped off a little further, evidently puzzled by some strange scent or sound. Below us we could look down into the excavations of temples, and beyond we could see the great pit in which Sir Leonard Woolley (1938) had identified the silt deposited by a flood that had covered the land, and eight feet beneath the silt the record of an earlier city. Beyond, perhaps a half mile away, was the part of the city where small houses and streets had been unearthed and all the detail of civilian living rediscovered. One of those houses must have been the birthplace and home of Abraham.

A herd of grazing camels drifted across the desert toward us, stopping to crop the camel-thorn which made faint yellow patches here and there on the plain. These strange timeless beasts must have been in this land when the Sumerians first arrived there. They certainly bore Terah and his family in their flight northward.

[2] Excavation chiefly in first decades of twentieth century (Woolley 1937).

[3] Group Captain O'Neill, Habbaniya, Principal Medical Officer, R. A. F. for Iraq and Iran, to whom I am indebted for the organization of this trip.

Not long after this exodus, Ur fell before the rising might of Babylon and temples, courts of justice, gay markets, luxurious homes and green fields were replaced by this desert. Ur was forgotten as well as lost. Even its name was recorded only in the Bible, a name which seemed to be as mythical as the Garden of Eden.

Much has now been rediscovered about customs and medicine in the time of Abraham, and it seems reasonable to attempt to reconstruct his ultimate influence upon medical history. Let me further present to you the influences to which he must have been subjected at the time of his adoption of circumcision and his abortive expedition to sacrifice his only son, Isaac. Some facts are available from archaeology and some from the Bible. This information must be eked out with rumour and surmise in order to draw the picture.

The father of Abraham, or of Abram as he was first named, was the eldest son of the chief of a tribe of Semitic nomads, the Habiru. Their headquarters were in Haran, a district which lay far to the north and which is now included in Turkey. His father, Terah, had come as a young man to live in Ur, where he prospered mightily. He kept a shop where he sold images of the many gods of Sumer, but he specialized in idols of the moon god, after whom he was named.[4]

Abram went to a private school where he learned to read and to write on clay tablets. He studied arithmetic, which included addition, subtraction, multiplication and division, and learned to conjugate difficult Sumerian verbs. He was taught the details of an intricate code of laws,[5] including the rights of free men and slaves, of wives and concubines, of priests and priestesses, and the rules of contract and trade. He studied history which included interminable king lists from the earliest times. He memorized religious hymns and the practices of innumerable gods. As a boy he was familiar with stories such as that of the flood, which I shall recount so that by comparison with the biblical story the relationship of Sumerian and Hebrew mythology will become apparent. Both legends may well refer to the inundation which buried Ur in mud a thousand years or more before Abraham.

The story of the Flood (Woolley 1928) as Abram would have recited it in school:

[4] The word Terah means Nannar, or moon god, in the Aramaic tongue. That Terah was an idol merchant is both a Jewish and a Mohammedan tradition.

[5] The Code of Hammurabi was probably derived largely from the laws of Sumer.

Once upon a time the gods gathered together because they were very angry at the way men were behaving. After much talk they decided to drown them, every one. But the god, Enki, did not keep the secret. Instead, he thought he would warn the good man, Uta-Napishtim, who dwelt in the village of Shuruppak on the great river Euphrates. But Enki did not tell the good man directly for fear of the anger of the other gods. Instead, he whispered to the good man's hut:—

"Reed hut, reed hut, wall, O wall,
O reed hut, hear, O wall, understand"

And Uta-Napishtim, hearing the message, built a boat and loaded into it all the harvest of life, the beasts and the herbs and also his own family. And when the young dawn came, a black cloud arose. Adad roared in it, and Nabu, Nergel and Inurta marched with it. For six days and nights it rained and stormed, until the gods themselves could not see each other for the darkness and they fled and climbed into the high Heaven of Anu.

When the seventh day came the hurricane abated, the sea was still, and all mankind was turned into mud. But the boat of Uta-Napishtim floated upon the surface of the water and came to an island and it was Mount Nitsir; and he sent forth a dove, but it came back. He sent forth a swallow, but it returned, for there was no place to rest. He sent forth a crow and behold the waters receded and it came not back.

And Uta-Napishtim left his ship on the top of the mountain and made a sacrifice to the gods. Now the gods had grown hungry because all the temples were under water, and so when they

"scented the sweet savour,
Like flies the gods gathered above the sacrifice."

After that they decided never to destroy man again.

We know that Abram's mother died while he was still a child. Let us assume that she suffered from a chronic illness.

Terah's family had been told that there was little hope of her recovery. When a lamb had been sacrificed for her to the goddess Ningal, the priest, who was famous as a soothsayer, had seen this in the animal's liver. In those days it was the custom to divide a liver, for the purposes of divination, into fifty squares. Each square had its own significance, and the liver of the sacrificed animal was thought to reflect the opinion of the god to whom sacrifice was made. Thus a fluke might alter the destiny of man or nation!

Terah appealed also to an astrologer who consulted the stars for him and returned a similarly bad prognosis. But Terah was not a man to resign himself to what seemed the inevitable. Consequently, when his wife suffered from colic he summoned a well known physician. The latter came to the house riding upon an ass, preceded by two slaves, and Abram recalled

that his mother had been made to stand upon her feet, weak though she was, while a " decoction of hypericum " was poured over her from head to foot. Then, while the physician was repeating interminably, like a prehistoric Coué, " she will recover, she will recover," the poor woman had fainted. However, her syncope evidently gave the doctor an important clue to treatment, for he promptly placed her head lower than her feet and began to beat upon her buttocks and to say, " may it be well, may it be well," and then with his thumb he struck her head twice seven times and then upon the ground an equal number of times (Comrie, 1909).

Somewhat later she became pregnant, but her child was still-born and for a time the mother's life seemed to hang in the balance. Her trouble was thought to be caused by the terrifying Babylonian spirit, Labartu (Jastrow, 1914), the gynaecological demon that was represented with swine sucking at her breasts. Against this demon the consulting physician sought the assistance of Ea, god of water, for water was called upon to cleanse the sick in the oldest incantations. The physician's incantation ran in part as follows: " Ea has made, Ea has loosened. Remove the evil, ease the pain. Undo the evil knot, Ea be with thee . . ."

She did recover, but her eyesight, which had been failing for some time, became worse and she found it difficult to direct the work of the family slaves and to supervise Terah's concubines properly. It should be understood that both law and tradition in Ur clothed the wife with authority and granted her rights and privileges which might not be infringed even by her husband.

Another physician was summoned, a man skilled in the treatment of eye diseases. Abram saw the surgeon and his assistant enter his mother's room, and after a period of anxious waiting the boy was told that they had used a lancet of bronze to open the "nagabtu." According to Comrie (1909) nagabtu probably meant cataract. He overheard a heated argument between his father and the physician concerning the fee charged. The physician pointed out that he must have 10 shekels; that even for the son of a poor man he would expect 5 shekels for the operation, and for the slave of a gentleman 2 shekels.[6] He heard his father say that if his wife should lose her eye as the result of the operation, he would go so far as to exact the full penalty of the law, which meant the physician should forfeit his own eye. But, at the end of the argument, Terah paid the charge and even added a present, like the gratuity or " backsheesh " of today.

Abram's mother grew gradually weaker, and for a time she was placed

[6] Fees established by the Code of Hammurabi—see Johns (1903).

in the public square so that passersby might stop and relate to her how they had themselves recovered from some similar ailment (Herodotus, I 197). This custom seems to bear a strong resemblance to the practice that obtains in some "watering places" today!

Shortly before her death, she became jaundiced and her abdomen protuberant. Abram always remembered with resentment how a priest-physician had come to the house with slaves who bore upon their heads jars containing portions of the carcass of an enormous bull that had been sent specially for this sacrifice, by their kinsmen, from the cattle-farm at Drehem.[7] The right fore and hind quarters had been left at the temple as the portion of the god, the left quarters were now to be enjoyed by the family, all but his mother. For her cure they laid the hugh animal's liver directly upon her abdomen and her reed bed was soiled by the blood of the sacrifice. All the while incantations designed to drive out evil spirits were repeated over her. During this final procedure his mother died, and Abram, who was a strange thoughtful boy, brooded over the event and took a curious dislike to all idols, including those in his father's shop.

Abram's childhood was probably not altogether happy. Other children taunted him and called him a "cut throat," for this was the ideogram applied to the Habirus who served as mercenaries in the army. Suspicion and dislike may well have set the Habiru people apart at this time. But Abram, being an excellent scholar, became a priest of the moon god and was elevated to the highest social class, the Amelu. Nevertheless, the time came when to save their lives these people were forced to flee from Ur,[8] and Abram, young, smooth faced, shaven headed, and hot tempered, cast away his priestly garments. Before leaving the city, in great anger, he broke the idols in his father's market and threw them into the Euphrates. He then renounced all gods except the special god which was worshipped in his own family. It was the custom in Ur that without slighting all the other gods, the head of each family should also worship a family god, of whom it was also the custom to make no graven image.

Years later Abram journeyed to Egypt with his beautiful wife, Sarai, who was also his half sister, being the daughter of Terah's second wife.

[7] The cattle farms at Drehem, not far from Babylon, were owned by the god Enlil and specialized in animals of all types for sacrifice. These farms were run by men whose Aramaic names indicate that they were Semites, and for centuries clay tablets record their sales to temples throughout Akkad and Sumer.

[8] Woolley (1936) concluded from the abrupt disappearance of a certain type of pottery in the dump heap outside the walls of Ur that the Semites left the city in a body at about the time of Abram.

Let us assume that, because of his standing as priest of Nannar, Abram entered the temple at Sais on arrival. The special divinity there was the goddess Neith, and the chief priest of her temple bore the double title of "Priest and Greatest of Physicians." In this secondary capacity he was director of a medical school which, at that time, had already been in existence 2,000 years.

Abram discovered that, although physicians were trained in the temple schools, they left the schools on graduation to form a group apart from the priesthood. He discovered also that (to use the words of the early historian, Herodotus [9]): "Medicine is practised among the Egyptians on a plan of separation; each physician treats a single disorder and no more. Thus the country swarms with medical practitioners, some undertaking to cure diseases of the eye, others of the head, others again of the teeth, others of the intestines, and some those which are not local."

He learned that they were financed by the temple treasury but received private fees as well. Thus they had their medical foundations, their regular and their irregular practitioners, full time teachers and specialists. The fame of these medical men went through all the world, as shown by the writings of Homer about 1000 B. C. (Odyssey, IV, 229).

Abram found that the Egyptian priests were much concerned about the sacredness of their own bodies. They were circumcised according to a very old custom in that country. They bathed often and dressed simply in white. They cut their hair every three days, avoided eating pork, drank only boiled or filtered water. In fact, the priestly class observed rules of hygiene, some of which the Israelites came to observe as a whole nation.

Although the Egyptians believed in one almighty, eternal god, who had created earth and heaven, yet they also believed in lesser gods and set great stock in charms and amulets. One of the commonest amulets was the utchat, or the eye of Horus, which was the sign for chemistry and which today physicians are still taught to place at the beginning of each prescription (℞). This, no doubt, serves as a charm to rid the drugs of harmful properties.

Egyptian prescriptions awaken in us alternatively admiration and mirth.[10] As an example, their remedies for baldness seem to have been as effective as those in present use:

[9] Herodotus was born about 484 B. C., but the quotation was probably equally applicable at the time of Abram.

[10] Comrie (1909) commenting on these prescriptions pointed out that the *Proceedings of the Royal College of Physicians and Surgeons*, London, 1651 A. D., describe as medicaments in good odor the following: swallows' nest, horn of stag and unicorn, powder of Egyptian mummy, excrement, etc.

For alopaecia take

Toes of a dog	1 part
Ripe dates	1 "
Asses hoof	1 "

Boil carefully in a pan of oil and use to rub in.

A second remedy is still more unexpected.

Equal parts of:
Writing ink and
Cerebrospinal fluid

(Some among my hearers might assume that this prescription suggests the existence of neurosurgeons at that time, specialists who might be counted upon to have on hand an ample supply of both liquids!).

Abram watched the treatment of a rich young man who had been badly burned with boiling pitch while watching construction on one of the pyramids. A physician applied " milk and wool " to the burnt skin, while another invoked the aid of Horus with these words: " Oh, Horus! thou son of God. There is fire in the land, whether there be water or not there is water in thy mouth, the Nile is in thy feet if thou come to quench the fire."

However, neither incantation nor local application averted the lad's death, and Abram, in amazement, witnessed the procedure of embalming. The embalmers were a skilled group, separate from the physicians, but the attending doctor could watch the procedure. As the parents in this case were able to pay well, the embalmers used the most expensive method which guaranteed eternity for the boy's body, although his soul was thought to have gone already to heaven while his third part (the shade or ghost), called Ka, would remain in the neighbourhood and was thought to be sufficiently active to play at draughts with visitors after the mummy had been placed in his tomb.

One of the embalmers took a sharp knife of agate, no other instrument would do, for the practice seems to have come down from the stone age; with this he made a long cut in the flank of the cadaver. The other embalmers then drove him away, pretending to throw stones at him, after which they proceeded to remove the thoracic and abdominal organs. The brain, for which they seemed to have little respect, was reached through the nasal passages with a " crooked piece of iron," and the cranium was relieved of its contents by " rinsing with drugs." For 70 days the body was then placed in a solution called natrum; and eventually, smeared with gum and wrapped in linen, it was placed in a form fitting box which was

returned to the family so that they might stand it erect in the sepulchral chamber.

Most early religions retarded medical evolution, but here was a procedure which provided physicians with the opportunity of post-mortem examination, a privilege denied them elsewhere up until recent times. This may well be the secret of the supremacy of Egyptian medicine. This was also the probable source of much of the knowledge of Hippocrates, for he obviously had access to Egyptian learning.

Unfortunately Egyptian intellectual advance was limited by a fatal tendency to believe that their knowledge represented the final truth. They attempted to fix and preserve for eternity everything that they prized. They froze the style of their sculpture and drawing. They perpetuated their own bodies as mummies. By speculation, research and careful observation, they raised to a high level the practice of medicine, but they then arrested further medical advance by drawing up rules of treatment. Like some physicians of today, they made the fatal mistake of believing in a text book after they had written it. Their text book was called the Book of the Dead, and from its rules of treatment physicians might thenceforth depart only at peril of their lives. And yet, some really great surgeon wrote the finest surgical treatise [11] of the ancient world, about 1,700 B. C., describing suture of skin lacerations, elevation of depressed skull fragments, reduction of fractures, and application of ointments. It is noteworthy that in this whole work there is to be found only one incantation.

When Abram entered the temple, he had let it be known that Sarai was his sister, and he probably left her in his tent outside the city. Be that as it may, her beauty came to the attention of Pharaoh, who was so delighted with her that he summoned her to court. But when he eventually learned that she was the wife of Abram, as well as his half sister, two possible courses of action lay open to the ruler according to the accepted moral code: either he might kill Abram and keep his wife, as Abram evidently feared he would do, or he might send them both away. He chose the latter course. Perhaps Sarai was the type of woman to inspire respect as well as admiration.

It was the custom in Egypt in those days that expeditions should be accompanied by a physician who received a full-time salary and attended all in the expedition free of charge. It seems altogether likely, therefore, that as they journeyed back to Palestine Abram should have added to his

[11] This is the Smith papyrus. It is suggested by Breasted that the original may have been compiled by Imhotep himself about 3,000 B. C. The treatise is evidently fragmentary as it covers only the head and thorax.

company an Egyptian physician just as Sarai took with her the Egyptian handmaid, Hagar.

Time passed and Abram had no issue, so Sarai, mindful of Sumerian custom, gave him her handmaid and Hagar bore him a child, Ishmael. But Sarai was capable of being jealous as well as charming. She insisted that Ishmael and his mother should be kept in a secondary position and there was no further issue for thirteen years.

Then a strange thing happened. Abram was circumcised. Let me discuss the obvious medical aspects of the case without reference to the commands of God, for it seems that he talked with his God as another man might with his own conscience. The record states that Abram, who was henceforth to be called Abraham, the " father of many nations," was circumcised and a year later Sarai bore him a son, Isaac.

That Abram could have carried out for himself this surgical procedure seems extremely unlikely. It seems equally unlikely that he would have allowed anyone else to carry out the procedure, unless he had some personal anatomical difficulty that was causing him trouble. In that case, he would certainly have had a consultation by a physician before it was undertaken, and the physician who advised it would have seen to it that he himself or some other expert carried out the procedure.

Therefore, the case should be explained on medical grounds as follows: Abraham had always been one of those individuals for whom circumcision was indicated on medical and hygienic grounds. It may be suggested that the lack of this surgical procedure was in part at least responsible for his wife's sterility. If that is the case, it becomes necessary to explain how it was that Hagar seemed to succeed once where her mistress had failed. The character of her child, Ishmael, the " wild man," and the thirteen years of her sterility following his birth, might strongly suggest the possibility that Abram was not in fact Ishmael's father.

At all events, let us conclude that the surgical procedure was proposed to him by his Egyptian physician who then operated. Sarai conceived. Immediately the impetuous Abraham imagined all the great advantages that this might bring to his nomadic people, who were forced to live in the heat and the dust, often without water that could be used for bathing. He would certainly believe it to be an excellent aid to fecundity and that his people would multiply throughout the earth more rapidly because of it.

He was a man of strong convictions and great enthusiasms, an idol breaker who had thrown off, for himself and for his followers, the fear of a thousand gods, to which man had been subject since time began. He

met this situation squarely and informed the people that his God had issued the edict that every free man and every slave, young or old, should immediately be operated upon.

That must have created a surgical problem before which the most experienced urologist might well quail. One wonders whether his Egyptian surgeon relished the prospect. But Abraham, with the vision of a great leader, went still further. He established this act as a covenant between each individual and his God, a form of somatic sacrifice that was consonant with the tradition of human sacrifice among the other peoples who lived about them in the land of Canaan.

In his Thèse de Paris on the subject of circumcision, Barras (1936) cited Abou as his authority and estimated that today there are about two hundred million circumcised males in the world, of which he estimated that twelve million Jews and one hundred and eighty-five million Mohammedans still look upon it as a religious observance. What clinical case ever had such an awe-inspiring sequel!

One other momentous event in the life of Abraham may claim our attention. Again I quote, with omissions, from Genesis, this time from the 22nd Chapter:

XXII, 1 And it came to pass after these things, that God did tempt Abraham, and said unto him, Abraham: and he said, Behold, here I am.

2 And he said, Take now thy son, thine only son Isaac, whom thou lovest, and get thee into the land of Moriah; and offer him there for a burnt offering upon one of the mountains which I will tell thee of. . . .

3 And Abraham rose up early in the morning, . . . and took two of his young men with him, and Isaac his son . . . and went to the place of which God had told him.

5 And Abraham said to his young men, Abide ye here with the ass; . . . and he took the fire in his hand, and a knife; and they went both of them together.

7 And Isaac . . . said, My father: and he said, Here am I, my son. And he said, Behold the fire and the wood: but where is the lamb for the burnt offering?

8 And Abraham said, My son, God will provide himself a lamb for a burnt offering: so they went both of them together. . . .

10 And Abraham stretched forth his hand, and took the knife to slay his son.

13 And Abraham lifted up his eyes, and looked, and behold behind him a ram caught in a thicket by his horns: and Abraham went and took the ram and offered him up for a burnt offering in the stead of his son.

I know of no more dramatic picture: This man had, in his youth, sacri-

ficed to the moon god on the top of the Ziggurat in Ur. Now, standing in anguish upon a mountain top in Canaan with knife in hand before his God, he was prepared to sacrifice his dearest possession, the lad he loved beyond all else in the world.

There has been endless discussion of the implications of this incident. But, without venturing into theology, some additions may now be made to the "case history" as it is presented in Genesis, additions which make it easier to understand how he came into, and perhaps out of, this dilemma. At the time that he had lived in Ur human sacrifice was no longer practised there, but the forms of Sumerian ritual show clearly that animal sacrifice was considered to be only a substitute for it. However, the Canaanites, among whom he was now living, did make human sacrifice, both actually and symbolically. They offered up their first-born and they passed their children through fire to Moloch. The fact that he had never up to this time made this supreme sacrifice might well have been represented to him as proof of the inferiority of his allegiance to his God compared with that of his neighbours.

Thus during his journey to Mount Moriah, the man who had conceived and given expression to the belief that the god of his family was the only true God must have reviewed the arguments for and against this act endlessly. In addition to being tribal leader and father, he was also high priest, and the religious views of the Sumerians and of his fierce neighbours must have warred in his tortured thinking against the natural love of a father and the ambition that his seed should inherit the land. One of the world's geniuses, a man whose sincerity can hardly be doubted, was contemplating something which history would certainly have considered the act of a madman, had he carried it out. In fact, this act might have eliminated him from historical record.

Archaeology throws an interesting sidelight upon this situation. The Sumerians had been making statuettes of a ram caught in a thicket by his horns for a thousand years before the time of Abraham. Several beautiful examples made of gold and lapis lazuli have been discovered in the royal tombs of Ur, so that both Abraham and Sarah were certainly quite familiar with the figures.

It might be suggested that the quick witted Sarah, mindful of the statuettes, sent a servant to place the ram in the thicket so as to provide a reasonable escape for her husband and save the life of her only child. You may prefer to believe that the sudden appearance of the ram caught by the horns in the time honoured attitude of the statuette was miraculous.

Or it may be argued that Abraham made his decision to substitute animal for human sacrifice once and for all and fell back upon a familiar allegory.

The Habiru became the Hebrews, the children of Israel, and continued in the land of Canaan. They accepted the God of Abraham, and with certain serious lapses from grace they remained true to Him. They became the first to codify the laws of hygiene (Castiglioni, 1941), and there seems to be a clear causal relationship between the adoption of monotheism and the establishment of rules of hygiene.

The Egyptians and other oriental peoples elaborated strict rules for the care of the body, but it applied principally to the priests. In Israel no one was excepted. This was an important step forward, and it seems fair to conclude that Abraham was at least partly responsible for the new point of view, for he had not been content with circumcision for himself and his sons. He also demanded it of the whole people.

Observance of sanitary rules became an act of piety: this included prohibition of certain foods and compulsory washing or bathing before meals, before prayer, before daily study of the law, and washing developed symbolically into baptism. Rules were made for isolation of contagious disease, such as leprosy and plague. Bathing and disinfection was prescribed to follow a visit to a house in which death had occurred. Strict laws regulated sexual relations and apparently prohibited coitus interruptus.

It is not suggested that Abraham initiated all these things, but they followed quite naturally from his introduction of the belief in one God and his inclusion of the whole people in the responsibility of that worship. Hebrew regulations were aimed almost exclusively at prevention and did not seem to include the treatment of disease. Indeed, physicians are mentioned rarely in the Bible, and then they sometimes seemed to be placed in the position of competing with God. For example, it was observed of Asa, King of Judah, who lived about 1000 B. C., that he " sought not to the Lord but to the physicians. And Asa slept with his fathers." (Second Chronicles, 16.)

In conclusion, I have tried to draw a picture of medical practice in Sumer and Egypt four thousand years ago, and have indicated the role played by Abraham in the history of medicine. It seems clear that insofar as he introduced the worship of one God and banished the fear of many gods, he may be said to have prepared the way for the substitution of hygiene and public health for the medicine and witchcraft of the ancient world.

This father of the Hebrew race was a wanderer with no land to call his

own, even at the end of his life, no land except the field of Machpelah, which he had purchased that he might have a burying ground for Sarah. He was cast off from the currents of the two great civilizations, that of Egypt to the west and of Sumer and Akkad to the east. Nevertheless, there was something in his philosophy that has proved more durable than the fame of Pharaoh or of Hammurabi.

BIBLIOGRAPHY

Barras, E.: *La Circoncision.* Paris, Librarie Lipschitz, 1936.

Breasted, J. H.: *The Edwin Smith Surgical Papyrus.* Chicago, University of Chicago Press, Vol. 1, 1930.

Castiglioni, A.: *A History of Medicine.* New York, Knopf, 1941.

Comrie, J. D.: Medicine Among the Assyrians and Egyptians in 1500 B. C. *Edin. Med. J.*, New Series, II, 101-129, 1909.

Jastrow, M.: The Medicine of the Babylonians and the Assyrians. *Proc. Roy. Soc. Med.* 7: pt. 2, Section on the History of Medicine, p. 109, 1914.

Johns, C. H. W.: *The Oldest Code of Laws in the World.* Edinburgh, Clark, 1903.

Penfield, W.: Sir William Osler. *Western Ontario Medical Journal*, 11: 79-88, 1941.

Woolley, L.: *The Sumerians.* Oxford, The Clarendon Press, 1928.

———.: *Abraham.* New York, Charles Scribner, 1936.

———.: *Digging up the Past.* London, Pelican Books, Ltd., 1937.

———.: *Ur of the Chaldees.* London, Pelican Books, Ltd., 1938.

AMERICAN SECTARIAN MEDICAL COLLEGES BEFORE THE CIVIL WAR

FREDERICK C. WAITE

An informative book on American medical education was published in 1944 which, by its title, implies that it includes all American medical colleges before the Civil War.[1] However, the mention of sectarian medical colleges is confined to an incomplete short chapter.[2] In view of considerable participation by sectarian institutions in medical education after the Civil War it is desirable to provide an enumeration of the chartered irregular medical colleges that began operation before April 1861.

Perkinism arose in Connecticut in 1796 as the first American medical cult; its life was short and adherents few. The alleged therapeutic agent was a pair of pointed instruments each about four inches in length, one of iron and the other of brass, called metallic tractors. Specimens of these may be seen in museums of the present day. An interesting relic of this cult is a satirical poem of 1,206 hexameter lines in four cantos, supplemented by abundant notes.[3]

The first American medical cult that enjoyed a sustained existence arose early in the nineteenth century and spread widely. No one has as yet studied the mass of material regarding this cult existing in many books and several periodicals and reduced it to a logical historical treatment. The only purported history is brief and not comprehensive.[4]

Samuel Thomson (1769-1843), an illiterate farmer of southwestern New Hampshire, began treatment of members of his family with a native herb shortly after 1800. He soon added more herbs and other therapeutic measures and extended his services to members of the rural community. He became an itinerant herb doctor about 1805 in southern New Hampshire, the southern part of what became the State of Maine in 1820, and northeastern Massachusetts, with headquarters at Portsmouth, New Hamp-

[1] William Frederick Norwood, *Medical Education in the United States before the Civil War*, 503 pp. (Philadelphia, 1944).

[2] *Ibid.*, pp. 416-21.

[3] Christopher Caustic (Thomas K. Fessenden), *Terrible Tractoration, a Poetical Petition against Galvanizing Trumpery and the Perkinistic Institution*, First American from the Second London Edition, 35 plus 192 pp. four page illustrations (New York, 1804).

[4] John Uri Lloyd, *The Life and Medical Discoveries of Samuel Thomson and a History of Thomsonian Materia Medica*, Bulletin 11 of the Lloyd Library of Botany, Pharmacy and Materia Medica, 144 pp. (Cincinnati, 1909).

shire. He moved to Boston before 1818 where he spent the remainder of his life.

The birth of the cult may be placed as about 1808 when he formulated his method of practice under the name of botanic medicine, soon popularly called Thomsonianism. He published a " medical circular " at Portsmouth in 1812 and in the following year secured a United States patent for his six remedies. This patent, after being held invalid in a court action in 1822, was amended and reissued in 1823. A renewal in 1836 made it valid until about 1850. A second edition of the pamphlet was published in 1815 and copyrighted. A third edition appeared in 1819 enlarged to sixteen pages. This was expanded into a book, with the aid of an educated clergyman, and published in 1822.[5] The title was modified in the second edition.[6] Twelve more editions were published in the following twenty years, one of them in German in 1828 to accommodate the Pennsylvania Germans. Samuel Thomson stated in 1839 that he had sold 100,000 copies of his book, each containing a right to use his patented medicines, and that the number at that time using his medicines exceeded three million persons.

The extensive acceptance of botanic medicine in all states east of the Mississippi River was an expansion of the familiar neighborhood domestic medicine. Botanicism was the sire or grandsire of nearly two-thirds of the more than one hundred American irregular medical colleges that arose in the nineteenth century.

This article is not a discussion of medical sects or of their dogmas, their few good points, and their many foibles. It is an enumeration of chartered irregular medical colleges that began operation before the Civil War, supplemented by enough information to make their interrelationships understandable. Some data is given for the more influential institutions. Official names were often changed and occasionally locations. The general plan of sequence in each group is chronological in order of founding but at times violated to save space by joint mention of institutions that arose from a single older medical college or were closely involved in a limited geographical area.

Only two of the institutions to be mentioned have an adequate published history. Compilation of complete accurate statistics of attendance and

[5] Samuel Thomson, *A Narrative of the Life and Medical Discoveries of Samuel Thomson; containing an Account of his System of Practice . . . to which is added an Introduction to his New Guide to Health* . . . 180 pp. (Boston, 1822).

[6] Samuel Thomson, *New Guide to Health; or, Botanic Family Physician, containing a Complete System of Practice* . . . (second edition, 134 pp. Boston, 1825).

number of graduates is difficult. The sources are medical college announcements and catalogues, the journals customarily published by each medical faculty, and the general journals of the cults and sects. Files of them are found in few libraries, widely scattered, and usually incomplete. Information from these sources is none too reliable concerning attendance because each institution and each faction tended to exaggerate its popularity. One device was publication in catalogues of lists of "matriculants." A matriculant was one who sent in a small fee to be enrolled in the class for the next session. Many never appeared for instruction and others withdrew after a few days. The ratio may be inferred from a statement by a sectarian historian concerning one medical college in one session. He wrote: "There were ninety-four matriculants and an average of fifty in steady attendance for a term of four months." [7]

The irregular medical colleges prior to the Civil War fall into two groups different in origin and without interrelationship except that they both derided the regular medical practitioners. The older, larger, and more complicated group will first be considered. Space limits mention of individual men.

Sectarian Medical Colleges arising from Botanic Medicine

Botanic medicine was characterized by much quarreling among its supporters, far more than among the regular practitioners or among the homeopaths. Several factions arose as a result and were reflected by change of official names when the majority of a faculty shifted its support from one faction to another.

Samuel Thomson had designated his cult as botanic medicine and had organized the Friendly Botanic Society which included, *ipso facto*, every purchaser of a copy of his book. The first opposing faction arose in the neighborhood of New York City under leadership of Wooster Beach (1794-1868) who designated it as reformed botanic medicine and organized the Reformed Botanic Society. Members of this faction later called themselves Reformers while their opponents termed them Beachites. The Reformers disclaimed any past or present relation to Thomsonianism.

1. *Reformed Medical College of New York City*

"Dr" Beach began instruction of a group of students in his home in 1825. He adopted the name of Reformed Medical Academy for this effort

[7] Alexander Wilder, *History of Medicine*, latest edition, 975 pp. (Augusta, Me., 1904), p. 580.

in 1827 and established an infirmary for use in teaching. The name was changed in 1829 to Reformed Medical College. An application to the legislature for a charter with power to grant the degree of Doctor of Medicine was refused. Similar efforts in later years were also futile, and the institution was never chartered and was unable to grant medical degrees. This unchartered medical college was the first sectarian medical college in the United States. It succumbed in 1838, the infirmary having been closed several years earlier.

The " graduates " received, in lieu of a medical diploma, an elaborately printed certificate of membership in the society which closely simulated the medical diplomas of that era in size and typography. It also had similar phraseology.[8]

2. *Worthington Medical College*

Beach and his three teaching colleagues, after failing to secure a charter in New York state, sought new fields where " the people were more liberally minded." Their preference was the rapidly growing state of Ohio and circulars were sent into the Middle West in 1829 seeking a favorable location.

Worthington College was chartered in 1819 and located at the village of Worthington, nine miles north of Columbus, Ohio, under direction of the Episcopal Diocese of Ohio. It closed in 1822 after a feeble existence.[9] The president of the dormant Board of Trustees invited Beach and his associates to occupy its vacant two-story brick building and operate under its charter, to which an amendment was secured permitting medical teaching and conferring of medical degrees. Instruction began in December 1830 with three professors, one of them resident in the village, under the official name of Reformed Medical College of Ohio, the Medical Department of Worthington College. It was commonly called Worthington Medical College. It was fairly prosperous, notwithstanding internal dissensions, until 1838 when financial difficulties and reduced attendance, both arising from the panic of 1837, brought a serious decline.[10]

The death blow came in the autumn of 1839 when a mob from a neighboring village, seeking the body of a women whose grave had been found empty, attacked the college and pillaged the building. The few students that continued were instructed in the home of the resident pro-

[8] Editorial, *Botanico-Medical Recorder*, XIII (Cincinnati, 1845), 307-08.

[9] George Franklin Smythe, *Kenyon College, its First Century*, 359 pp. (New Haven, 1924), p. 6.

[10] Frederick C. Waite, " The Second Medical School in Ohio, at Worthington, 1830-40," *Ohio State Medical Journal*, 33 (Columbus, 1937), 334-36.

fessor during the remaining weeks of the session. The legislature repealed the amendment to the charter that had authorized medical teaching in March 1840.[11] This ended the career of the first chartered sectarian medical college in the United States although an institution chartered in 1845 claimed direct succession.

Part of the catalogues have been found. These indicate that the largest enrollment in any session was about forty students. A reliable source lists eighty-eight degrees of Doctor of Medicine conferred through 1838.[12] The few degrees conferred in 1839 and 1840 bring the total to over ninety but less than one hundred.

3. *Botanico-Medical College of Ohio*

Alva Curtis went from New Hampshire to Richmond, Virginia before 1830 as a private teacher of languages. He embraced Thomsonianism early in 1832 and practiced in Richmond. He moved to Columbus, Ohio in the summer of 1835 to assume editorship of the *Thomsonian Recorder*, then in its third volume.[13] This journal was the best periodical of the cult and at this time subsidized by Samuel Thomson.

Mr. Curtis in February 1836 formed a class of fifteen students under the name of Botanico-Medical School of Columbus, without a charter. A charter was secured in 1839 for the Literary and Botanico-Medical Institute of Ohio and the medical teaching was given the name of College of Physicians and Surgeons. Removal to Cincinnati was made in 1841.[14] At times additional names were appended but it was commonly called the Botanico-Medical College of Ohio until 1850 when the name Physio-Medical College was adopted, the first use of the phrase "physio-medical" in the name of any medical college. It closed in 1880. This was the first chartered Thomsonian medical college and the first chartered institution in which the word "botanic" appeared in the official name. This statement is made with knowledge that Elisha Smith founded in New York in 1836 the Medical College, Botanic, which continued until 1846. Search reveals no record of a charter for it.

[11] Jonathan Forman, "The Worthington Medical College," *The Ohio State Archaeological and Historical Quarterly*, 50 (Columbus, 1941), 379.

[12] Harvey Wickes Felter, *History of the Eclectic Medical Institute, Cincinnati, Ohio, 1845-1902*, 203 pp. (Cincinnati, 1902), pp. 146, 170.

[13] Jonathan Forman, "Dr. Alva Curtis in Columbus: The Thomsonian Recorder and Columbus' First Medical School," *The Ohio State Archaeological and Historical Quarterly*, 51 (Columbus, 1942), 332-40.

[14] "The Botanico-Medical College, its History," *Botanico-Medical Recorder*, XII (Cincinnati, 1844), 59-60.

Alva Curtis broke with Samuel Thomson in 1840 and headed a new faction, at first called Independent Thomsonians but later known in eastern states as Physiopathists and in the Middle West as Physio-medicals. Their opponents called them Curtisites.

4. *Southern Botanic-Medical College*

Botanic medicine spread not only westerly but also southerly. A new center of teaching arose early in December 1839 at Forsyth, a county seat in central Georgia. A charter was granted late in December 1839 to the Southern Botanic-Medical College, the first sectarian medical college in a southern state.

The legislature made a grant of $5,000 in 1842 and one of the same amount in 1844, the first legislative grants to any sectarian medical college in the United States. They were not only helpful financially but gave the institution much prestige.

Dissension arose in the faculty in 1844 and three professors withdrew or were dismissed. The institution was moved in 1845 twenty miles to Macon, then the capital of the state. The legislature in 1852 made a grant to help erect a building.

The name was changed in 1854 to Reformed Medical College of Georgia, representing a shift in factional allegience. This was the most prosperous of all botanic colleges in the South before the Civil War as shown by a record of forty-one graduates in 1859. It suspended in 1861 and was revived in 1867. The name was changed to American College of Medicine and Surgery in 1874, followed by removal to Atlanta in 1881 where it soon was merged with the Georgia Eclectic Medical College founded in that city in 1867.

The Thomsonian Medical College was located at Barbourville, Georgia in 1850. A search of the acts of the Georgia legislature of that period fails to show that a charter was issued.

5. *Alabama Medical Institute*

Some of those who left the faculty of the Southern Botanic-Medical College in 1844 secured a charter for this institution in 1845. It was located at Wetumpka, Alabama and gave one session from November 1845 to February 1846 and then closed.

6. *Eclectic Medical Institute*

The death of Samuel Thomson in Boston on October 4, 1843 was followed by rapid changes in the comparative influence of the several factions that had arisen from botanic medicine. His oldest and ablest son died in 1844 leaving no competent leader of the cult; it rapidly fell apart. Some former Thomsonians joined the Physiopathists; the majority went over to the Reformers. A few loyal followers of the memory of Samuel Thomson retained the name of Thomsonians until after the Civil War. However, the organization of the cult disappeared before the expiration of the Thomson patents about 1850. The Reformers were now in the saddle.

The resident professor at Worthington tried to carry on a private school for two years after the annulment of the charter of Worthington Medical College. He removed to Cincinnati in 1842 and with two colleagues endeavored to revive the medical college under the name of the Reformed Medical College of Cincinnati. Efforts to get a charter failed in 1843 and 1844. A charter was granted in 1845 under the name of Eclectic Medical Institute, the first use of the word "eclectic" in the official name of an American medical college.

Medical degrees were first conferred in 1846 and 988 degrees of Doctor of Medicine were granted in course besides over eighty honorary degrees before the Civil War. The degree of Doctor of Homeopathy was also conferred in one year. Many dissensions arose in the faculty. This was the leading eclectic medical college in the country, the first to arise and the last to succumb. The name was changed to Eclectic Medical College in 1910 and the institution closed in 1939 after a life of ninety-four years, or of 109 years if the continuity with Worthington Medical College is conceded. It is the only medical college arising from botanic medicine of which an adequate history has been published.[15]

7. *Worcester Medical College*

Samuel Thomson opposed the founding of colleges to teach his cult, saying that a copy of his book with ability to read it and a supply of his patented remedies were the only needs for successful practice. Moreover he insisted that his followers should use no remedies except those described in his book. He also said that education was a disadvantage because it left the mind less free to accept his doctrine. However, he encouraged the organization of local societies where the owners of a copy of his book might discuss its contents and the statements in his pamphlets.

[15] Felter, *op. cit.*

He succeeded in suppressing several efforts to organize botanic medical colleges in New England although he had been unable to prevent founding of a few such institutions in distant states. His death in 1843 removed the ban on seeking information outside his publications.

The Uxbridge (Massachusetts) Botanic Society in 1845 concluded they needed more than Thomson's book and invited two graduates of regular medical colleges to give a course of lectures on anatomy, physiology, and pathology. These were given in January 1846 and at their close the society passed a resolution to found a medical college in neighboring Worcester under the name of the Worcester Medical Institution. Instruction began in February 1846.

An effort to secure from the legislature the power to confer the degree of Doctor of Medicine was unsuccessful, and in order to be able to grant degrees a contract was made with the Southern Botanic-Medical College, seven hundred miles distant, under which the Worcester organization became a branch of the Georgia college and in conformity changed its name to Worcester Botanico-Medical College. The classes of 1846 and 1847 received their degrees under the Georgia charter. The name was again changed to New England Botanico-Medical College in 1848 when a contract was made with an institution at Petersburg, Virginia and the classes of 1848, 1849, and 1850 were graduated under authority of a Virginia charter.

Continued efforts in the Massachusetts legislature brought a charter in 1849 for the Worcester Medical College without power to confer medical degrees, a disability removed by an amendment in 1851.

The decline began in 1853 and its building was sold for debt in 1855. The next session was held in rented quarters in Worcester and the session of 1856-57 in Boston. After return to Worcester a session was held in 1857-58 and some teaching was done in the winter of 1858-59. The trustees formally closed the institution in February 1859.

Record has been found of 140 degrees of Doctor of Medicine conferred through 1855. The number of degrees in 1857 was nine and for 1859 it was two. The number for 1856 and 1858, have not been found. The total number is approximately 160.[16] The first degree of Doctor of Medicine conferred upon a woman in New England was granted by this institution in June 1852.[17]

[16] Frederick C. Waite, "The First Sectarian Medical School in New England at Worcester (1846-1859), and its Relation to Thomsonianism," *New England Journal of Medicine* 207: (Boston, 1932), 984-88.

[17] Frederick C. Waite, "Dr. Lucinda Susannah (Capen) Hall, the First Woman to

The charter was kept alive by *pro forma* meetings of trustees in the hope of reviving the college and in Massachusetts today is a medical college, not recognized by the American Medical Association, that has been operating since 1914 under the charter of the institution that closed in 1859. It is the last remnant of botanic medicine in the United States.

8. *Botanic-Medical College of Memphis*

This third sectarian medical college in a southern state received its charter in February 1846 and instruction began approximately at the same time with a faculty made up in part of some of those who had attempted establishment of the institution in Alabama a year earlier. Therefore it claimed to be a successor of the Alabama effort. It was Thomsonian at the outset but shifted to the Reformers and in 1859 took the name of Eclectic Medical Institute of Memphis. It closed in 1861.

9. *Scientific and Eclectic Medical Institute of Virginia*

The legislature of Virginia passed a charter for a botanic medical college to be located in Richmond early in the session of 1846, followed by repeal of the act before the end of the session. The charter was reenacted in 1847 placing the institution at Petersburg, Virginia. Instruction began in 1847 and after a feeble existence during three years the medical college closed. Its relation to teaching at Worcester, Massachusetts has been mentioned. The Virginia institution planned to copy the Eclectic Medical Institute at Cincinnati and was eclectic from the beginning.

10. *Memphis Institute*

The legislature of Tennessee enacted a charter in 1847 for an educational effort to be located at Memphis that was to include teaching in arts, science, law, and medicine. Medical instruction was the only part that went into operation, beginning in 1849 and suspending in 1851.

11, 12, 13. *Offshoots from the Eclectic Medical Institute*

The historian of this medical college designates its early professors as turbulent, domineering, pugnacious, and imbued with personal jealousy. The result was wrangling and dismissal of professors at intervals. One man dismissed in 1848 immediately founded the American Reformed

Receive a Medical Degree from a New England Institution," *New England Journal of Medicine*, 210: (Boston, 1934), 644-47.

Medical Institute as a rival in the neighboring city of Louisville, Kentucky. It closed after two sessions. Two professors dismissed in 1852 founded a local rival under the name of American Medical College which gave four sessions in Cincinnati and then expired.

Another dissension in 1856 brought dismissal of two professors who founded in Cincinnati the Eclectic College of Medicine which proved a serious competitor. It graduated 131 candidates in the three classes of 1857, 1858, and 1859 while the parent institution was graduating 175 candidates. After the close of the session of 1859 the rivalry was composed and the new medical college was absorbed by the parent.[18]

14, 15. *Eclectic Medical Colleges of Central New York*

Upstate New York was a stronghold of Thomsonianism second only to central and southern Ohio. The disintegration of the cult in the middle 'forties caused many of its former adherents to affiliate with the Reformers. A Reformed Medical Association of Western New York in 1847 took under its patronage the Medical School of Fredonia and the Randolph Medical Eclectic Institute. Each was located in a village in western New York. The group at Fredonia moved to Rochester in 1848 and assumed the name of Eclectic Medical Institute of New York. No record of a charter with power to confer medical degrees has been found for these teaching efforts under three names.

A New York State Eclectic Association was organized in 1849 and advocated founding of a medical college in the central part of the state. A charter with power to confer the degree of Doctor of Medicine was secured under the name of Central Medical College. The two institutions in western New York were merged to form it and instruction began in Syracuse in November 1849.[19] The first session was filled with violent dissension and at its close the trustees dismissed half the faculty and moved the institution back to Rochester with a change of name to Rochester Eclectic Medical College.

The dismissed professors immediately organized a rival under a new charter to be located at Syracuse with the name of Syracuse Medical College. The institution at Rochester was absorbed in 1852.[20] It had conferred forty-seven degrees. Dissension did not abate and brought final closing

[18] Felter, *op. cit.*, pp. 36, 41, 43-44.

[19] Wilder, *op. cit.*, pp. 578-84.

[20] Levi Reuben, "Union of the Eclectic Medical Colleges of New-York and Massachusetts," *Eclectic Journal of Medicine*, IV (Rochester, N. Y., 1852), 433-36.

in 1855 at Syracuse after granting seventy-one degrees. This organization has no relation whatever to the present Syracuse University founded in 1870.

The historical significance of this group lies in the fact that the Central Medical College in October 1849 adopted a definite policy of coeducation.[21] This was the first medical college in the United States to adopt such a policy. The entrance of Elizabeth Blackwell at Geneva Medical College in 1847 and her graduation in January 1849 was not a policy but an episode involving only one student. That medical college passed a resolution to enroll no more women students before Miss Blackwell was graduated, and held to it until 1863 when one woman was enrolled and graduated in 1865.

The second woman to receive the degree of Doctor of Medicine in the United States was graduated at Central Medical College in February 1850.[22] Three more women were graduated at one or the other of these two medical colleges before the first degrees were granted at the Female Medical College of Pennsylvania on Decembr 31, 1851.[23] The first woman graduate in any of the medical colleges in Ohio arising from botanicism was graduated in 1852.

The policy of coeducation in medicine inaugurated in central New York in 1849 was soon adopted by other eclectic institutions and within a few years by some homeopathic medical colleges and followed by both groups. The National Eclectic Association indorsed coeducation in 1855. Meanwhile the regular medical colleges for men frowned upon coeducation and in all of them prior to 1870 a total of less than ten women were graduated, in no case as a sustained policy. A woman who wished to study medicine had the choice of the medical college for women in Philadelphia—considered regular after 1853—or of one of the sectarian institutions. The result was that the majority of the women physicians in the nineteenth century were affiliated with one of the medical sects.

16. *Metropolitan Medical College*

The first joint founding of a medical college by two factions was tried in this institution. A name was chosen that favored neither faction. The

[21] *Syracuse (N. Y.) Daily Star*, Oct. 23, 1849 and *Northern Christian Advocate* (Auburn, N. Y.). Oct. 14, 1849, p. 118.

[22] Frederick C. Waite, "Dr. Lydia Folger Fowler, the Second Woman to Receive the Degree of Doctor of Medicine in the United States," *Annals of Medical History*, IV, new series (New York, 1932), pp. 290-97.

[23] *Ibid.*, p. 292.

Physiopathists were in the ascendency in the early years but the Eclectics later secured control and it is usually listed as eclectic. The founding in New York City was coincident with securing a charter in 1850, which was enlarged by amendment in 1857. Attendance was meager and graduates few. Statistics for early years have not been found. There was one graduate in 1860 and eight in 1861. Death came by a legislative act repealing the charter in 1862.

17. *Female Medical College of Pennsylvania*

The alumnae of the present Woman's Medical College of Pennsylvania may object to having their alma mater listed among irregular medical colleges. A charter was enacted in the winter of 1850. Difficulty in securing a faculty postponed the beginning of instruction to September of that year. Regular physicians declined invitations to join the faculty because of the prejudice against the medical education of women. Medically educated women were not then available. Therefore several irregular practioners were in the first faculty. The institution was considered irregular, not so much because it was solely for women as because of the irregularity in practice of some of its professors. This condition continued for two years when regular physicians were induced to accept appointments and the irregulars withdrew.

Seventeen women received the degree of Doctor of Medicine in the first two classes, graduated while the irregulars were members of the faculty. The early irregularity of this medical college has long since been forgotten and forgiven, but the historical record of its first two sessions brings it into the enumeration of sectarian medical colleges. The name was changed to the present form in 1867.

18. *Eclectic Medical College of Pennsylvania*

This institution was chartered in February 1850 and began instruction in Philadelphia in March 1851, timed to catch students who had just finished the winter session in the regular and homeopathic colleges of that city. Its varied career ended in 1880.

19. *American College of Medicine*

This institution was chartered in 1853 as a rival of the Eclectic Medical College of Pennsylvania. It conducted a session in 1853-54 at the end of which twenty-nine men were graduated, and then suspended. It was

revived in 1856 under the name of Eclectic Medical College of Philadelphia. It had a total of forty-seven graduates in the two classes of 1860 and 1861. The name was changed after the Civil War to Philadelphia University of Medicine and Surgery. It finally closed in 1880.

20. *New England Female Medical College*

Samuel Gregory, a well-educated man of Boston, was much disturbed by the obstetrical delivery of women by male physicians, whom he called "men midwives." He lectured in several towns in New England advocating establishment of an institution to give instruction in some medical subjects to women. He also published some pamphlets on the subject. This was before Elizabeth Blackwell was admitted to Geneva Medical College and some years prior to the effort to found a medical college for women in Philadelphia.

Instruction was begun under the direction of Mr. Gregory on November 1, 1848 to twelve pupils, "the first class of females ever assembled in America for the purpose of qualifying themselves to enter the medical profession." [24] Mr. Gregory employed one lecturer in the first session and two during the following three years. He gave the name of Boston Female Medical College to this unchartered teaching.

The Female Medical Education Society was chartered in 1850 "to provide education for midwives, nurses, and women physicians" and took charge of the instruction. It was only a school for midwives until 1852 when the teaching staff was enlarged and the name of New England Female Medical College assumed.

During two years several members of the faculty were those who had taught in the Female Medical College of Pennsylvania in its first two years. These men and one woman were Eclectics and therefore the medical college at Boston started under the designation of an eclectic institution when it began to give a full medical course. Two women received the degree of Doctor of Medicine in 1854 and a total of thirty-two before April 1861.

An infiltration of homeopaths came into the faculty in the late 'sixties and in 1874 the institution was merged into the Medical Department of Boston University which had been established in 1873 and was homeopathic.

A woman professor in the New England Female Medical College, who was a graduate of a regular medical college in Ohio, in 1862 founded

[24] *Fourth Annual Report of the Female Medical Education Society and the New England Female Medical College* (Boston, 1855), p. 13.

the present New England Hospital for Women and Children and also established the first training school for nurses in the United States. Therefore this institution has important historical relations to the medical education of women, hospitals for women, and the training of nurses.

21. *Penn Medical University*

The men who withdrew from the Female Medical College of Pennsylvania immediately secured a charter for Penn Medical College, named for William Penn. It frequently has been confused with Pennsylvania Medical College, an entirely distinct institution. The name was soon changed to Penn Medical University. The charter was enacted in February 1853 and instruction began soon after. Approximately 185 degrees of Doctor of Medicine were conferred before April 1861, of which one-third were granted to women.

Two policies adopted in 1854 and continued for several years make this medical college of historical importance. Two departments were organized, a male department and a female department, with instruction by a faculty identical in membership except for the demonstrator of anatomy. The students of the two departments were taught separately in the same building at different hours of the day, a device to avoid criticism of coeducation in medicine.[25] This was twenty years before some colleges of arts for men adopted the plan of parallel organizations for teaching of women, with different names and housed in different buildings on the same or adjacent campuses. This arrangement came to be called coordinate education.

Also in 1854 Penn Medical University adopted a plan of " progressive education " under which the curriculum was divided into four groups of subjects to be taken in succession in four sessions in two calendar years. This was a graded curriculum in contrast to the repetitive curriculum which had been universal in all American medical colleges up to that time.[26] Thus this sectarian medical college was the pioneer in coordinate education and in the graded medical curriculum. It had a varied career from 1861 to 1881 when it closed.

22. *Physio-Medical Institute*

A local rival of the Physio-Medical College was founded in Cincinnati in 1859 with the above name. It had fifteen graduates before April 1861. It continued until 1885.

[25] Frederick C. Waite, " Medical Education of Women at Penn Medical University." *Medical Review of Reviews.* June, 1933.
[26] *Ibid.*

Other physio-medical colleges were founded after the Civil War in Indiana, Illinois, and Texas. Also attempts to unite the two remaining factions that had arisen from botanicism, first tried in the Metropolitan Medical College in 1850, were repeated after the Civil War. They adopted the terminology physio-eclectic medical colleges. All were short-lived. All of these physio-medical institutions were descendants of Thomsonianism and Alva Curtis was their immediate sire.

The foregoing recital enumerates twenty-one chartered medical colleges arising from botanic medicine before the Civil War. The first one listed had no charter. This enumeration does not include changes of name under the same organization. Nine of these twenty-one lasted less than five years.

The unchartered " schools " are not included in the enumeration. Four of these in New York, two in Ohio, and one in Georgia have been mentioned incidentally. Many more existed. Each was a local organization in which two or more preceptors participated in joint teaching of their private students. A considerable number of charters were enacted for sectarian medical colleges without subsequent organization of instruction.

The total number of degrees conferred before April 1861 have been mentioned for ten of these institutions arising from botanic medicine and aggregate 1,816 degrees. Complete statistics are not available for the other eleven chartered medical colleges. Three of these—the Botanico-Medical College of Ohio, Southern Botanic-Medical College, and the Botanic-Medical College of Memphis—were prosperous and each had a relatively long existence before 1861. If complete statistics were available for all twenty-one medical colleges the aggregate number of degrees conferred would probably be about three thousand, four times as many as the degrees conferred by all homeopathic medical colleges before April 1861.

Homeopathic Medical Colleges

The story of this group begins later, involves fewer institutions, and is less complicated by factional contention. The first recorded practitioner of homeopathy in the United States was Hans Burch Gram who came from Denmark in 1825 to practice in New York City. He was preceptor for some students but had no connection with any medical college.

23. *North American Academy of the Homeopathic Healing Art*

A few natives of Germany who had been converted to homeopathy in Europe came to Pennsylvania, the first before 1830. They were preceptors

for students. One of these in 1835 organized a "school" in Allentown, Pennsylvania, and in 1836 a charter was enacted by the legislature under the above name. This long name was commonly abbreviated to Allentown Academy. It was the first chartered homeopathic medical college and had the power to confer the degree of Doctor of Homeopathy. Instruction was entirely in the German language.[27]

The fragmentary records give little detailed information. Instruction was not given every year. The last year in which teaching was done was 1841 or 1842. Attendance was meager and few degrees were conferred, some of these on those who participated in the teaching. The first American edition of Hahnemann's *Organon* was published at Allentown in 1836.

24. *Homeopathic Medical College of Pennsylvania*

A national homeopathic medical society organized in 1844 advocated establishment of a medical college, and under its direction a charter was secured in 1848 for this institution with power to confer the degree of Doctor of Homeopathy, later extended to permit granting of the degree of Doctor of Medicine. This is commonly considered the first homeopathic medical college, the halting effort at Allentown being ignored.

Instruction began in October 1848 with attendance of fifteen students of whom six were graduated in March 1849. The total number of ordinary graduates before April 1861 was 399. Six honorary degrees were given in this period and also twenty-six "special" degrees making a total of 431 of all kinds of degrees.

A rival was founded in 1866 under the name of Hahnemann Medical College of Philadelphia. These two merged in 1869 under the name of the rival. The name was extended in 1885 to the present form of Hahnemann Medical College and Hospital of Philadelphia. An adequate history of this institution was published in 1898.[28]

The nature of the "special" degrees is not clearly explained by the historian. Incidental references indicate that they were not earned degrees. The last of this type was conferred in 1870. Six of the recipients of these "special" degrees before the Civil War were residents of Europe, three of Cuba, one of Canada, and sixteen of the United States.

[27] Thomas Lindsley Bradford, "Homeopathy in Pennsylvania," in William Harvey King, *History of Homeopathy and its Institutions in America* (4 vols. New York and Chicago, 1905), I, 114-18.

[28] Thomas Lindsley Bradford, *History of the Homeopathic Medical College of Pennsylvania; the Hahnemann Medical College and Hospital of Philadelphia*, 933 pp. (Philadelphia, 1898).

25. *Western College of Homeopathic Medicine*

A few converts to homeopathy met in Cleveland, Ohio shortly after the graduation of the first class at the Homeopathic Medical College in Philadelphia in the spring of 1849. They discussed founding of a similar institution in Ohio but took no definite action.

Development of another sectarian group in Ohio was a threat to the infant Eclectism which already had a problem in its competition with the Physio-medicals. Therefore the Eclectics tried to engulf the embryo homeopathy by establishment of a professorship of homeopathy and the degree of Doctor of Homeopathy in the Eclectic Medical Institute of Cincinnati. The authorities of that institution asked the group in Cleveland to nominate a professor of homeopathy, who was appointed. Violent dissension in the faculty terminated the plan at the end of the first session with abolishment of the professorship of homeopathy. Six men received the degree of Doctor of Homeopathy in March 1850 in addition to the degree of Doctor of Medicine.[29]

The group in Cleveland secured a charter in March 1850 under the name of the Western College of Homeopathic Medicine. Instruction began in November 1850 and the first class was graduated in March 1851. Women were admitted at the outset and the first woman to receive the degree of Doctor of Medicine from a homeopathic medical college was graduated in February 1852.

An episode similar to that at the Worthington Medical College in 1839 occurred toward the end of the second session when a mob, with similar impulse, wrecked the interior of the rented building and destroyed all the teaching equipment.

The name was changed to Western Homeopathic College in 1856 and again changed to Western College of Homeopathy in 1860. This followed a dissension in the faculty in 1859 when five of the seven professors resigned. The degree of Doctor of Gynecology and Obstetrics was established in 1860 for those who chose to take a shorter course. Two women received this degree.[30] The total number of graduates before April 1861 was 257 of whom twelve were women. This was the most influential homeopathic medical college west of the Allegheny Mountains and con-

[29] Felter, *op. cit.*, pp. 28-30.

[30] David Henry Beckwith, "The Western College of Homeopathic Medicine," 55 in King, *op. cit.*, vol. III, chap. i.

tinued until 1914. Elsewhere I have discussed more extensively the history of homeopathic medical education in Cleveland during sixty-four years.[21]

26. *Hahnemann Medical College of Chicago*

A small homeopathic hospital was established in Chicago in 1854 and in 1855 a charter was secured for a homeopathic medical college. Although the incorporators organized as a Board of Trustees the appointment of a faculty was delayed and instruction began in 1860 with the first class graduated in 1861.[22] This institution continued, with some changes of name, until 1922.

27. *Homeopathic Medical College of Missouri*

The five men who resigned from the faculty in Cleveland in 1859 went to St. Louis and established the first homeopathic medical college west of the Mississippi River. The first class was graduated in 1860. This institution graduated twenty-nine men before the Civil War. A varied history, including suspension for three years during the Civil War and later absorption of other institutions, ended with its final closing in 1909.

28. *Homeopathic Medical College of the State of New York in New York City*

Following two futile attempts to found a college of this sect in New York City a charter was secured in 1860 and instruction began in that year. The first class was graduated in 1861 with twenty-six members. The original charter gave the power to confer the degree of Doctor of Homeopathic Medicine, later extended to give the degree of Doctor of Medicine.[23] This institution has had many changes of name and is now officially the New York Medical College and Flower Hospital.

Statistics of the number of degrees conferred before the Civil War have been found for four of the six homeopathic medical colleges and give a total of 743. The number at Allentown was few and the institution in Chicago graduated only one class before the Civil War. These additions probably bring the total number of degrees conferred by homeopathic medical colleges to between 750 and 760.

[21] Frederick C. Waite, *Western Reserve University, Centennial History of the School of Medicine*, 588 pp. (Cleveland, 1946), pp. 310-35.

[22] Lucius H. Zeuch, *History of Medical Practice in Illinois. Volume I, preceding 1850*, 735 pp. (Chicago, 1927), pp. 242-43.

[23] Franklin B. Hough, *Historical and Statistical Record of the University of the State of New York during the Century from 1784 to 1884*. 870 pp. (Albany, 1885), p. 397.

Inasmuch as all the homeopathic medical colleges except that in St. Louis were in the North they suffered less as a group from the Civil War than did the medical colleges arising from botanic medicine.

29. *New York Hygieo-Therapeutic College*

This institution, being the only one of its kind before the Civil War, can not be designated as a group. It was developed from the somewhat popular hydropathy introduced into the United States about 1843 and first characterized by founding of many sanitaria known as "water cures." This first college of the cult was chartered in 1857. It was located in New York City and had the power to confer the degree of Doctor of Medicine.[84] Little information is available concerning it. It was not listed in the New York City directory after 1864.

A discussion of the quality of medical education given by these sectarian medical colleges, both comparative among themselves and as compared with the regular medical colleges of that era, is a long story and it is not feasible to make any generalizations without offering supporting evidence. A study of American medical education of the nineteenth century, especially the medical education of women, requires attention to the sectarian medical colleges. This brief survey gives only clues to the many factors involved.

[84] *Ibid.*, p. 404.

TEXTS AND DOCUMENTS

GALEN'S DISSECTION OF THE LIVER AND OF THE MUSCLES MOVING THE FOREARM

TRANSLATED FROM THE "ANATOMICAL PROCEDURES"

OWSEI TEMKIN AND WILLIAM L. STRAUS, JR.

The translation of the following extracts from Galen's "Anatomical Procedures" originated in connection with the activities of the Institute of the History of Medicine. In the course of a research seminar, presided over by Dr. Sigerist, the ancient sources dealing with the anatomy, function and pathology of the liver were discussed as an example of anatomical thought in Antiquity. One of the authors contributed a translation of the anatomy of the liver as described in Book 6, chapters 8, 10, 11 and 12 of the "Anatomical Procedures." The translation of chapter 11 of Book 1 of the same treatise, as far as it deals with the dissection of the muscles which move the forearm, was occasioned by the Third Graduate Week in Medical History held at the Institute in 1942.[1] It is generally recognized[2] that Galen's account of the muscles is based largely upon study of the Barbary ape, *Macaca sylvanus* (= *Macacus inuus*). Unfortunately it was not possible to study an example of this animal. The accuracy of Galen's description was demonstrated, however, by actual dissection of the muscles of the arm of a rhesus monkey, *Macaca mulatta*, a closely related species, where Galen's text was followed step by step. The excellence of Galen's anatomy of the muscular system was pointed out by Milne[3] more than 30 years ago, and the present extract contributes a specific example in support of this contention. The reader will probably notice the difficulty of expression which Galen experienced from the lack of proper names for most of the muscles described. To facilitate understanding, the authors have included two illustrations (figs. 1 and 2) showing the muscles of the scapula, upper arm and forearm of the rhesus monkey from Hartman and Straus, *The Anatomy of the Rhesus Monkey*.[4] The permission given by The Williams and Wilkins Company for reproducing these illustrations is gratefully acknowledged. It is possible, though quite unproved, that Galen himself illustrated his geometrical description of the deltoid muscle by some drawing. At any rate, Kühn's edition (which here as usual follows older Renaissance editions) contains a picture which, however, is based on

[1] Cf. *Bull. Hist. Med.*, vol. 12, 1942, p. 451 ff.

[2] Cf. Charles Singer, *The Evolution of Anatomy*, London, 1925, p. 57, and John S. Milne, Galen's Knowledge of Muscular Anatomy, *Seventeenth International Congress of Medicine*, London, 1913, Section 23, History of Medicine, London, 1914, pp. 389-400, esp. p. 390.

[3] Milne, *op. cit.*, p. 393.

[4] A. Brazier Howell and William L. Straus, Jr., The Muscular System, in: *The Anatomy of the Rhesus Monkey*, ed. C. G. Hartman and W. L. Straus, Jr., Baltimore, The Williams & Wilkins Company, 1933, Figs. 42 (p. 129) and 43 (p. 133).

human anatomy and is, therefore, misleading.[5] This picture has been replaced by a semi-diagrammatic sketch in which the contours of the bones and the schematic outlines of the muscle (broken lines) approximate conditions in the macaque (fig. 3).

Since Galen's main anatomical work is not easily accessible to the English scientific reader, the authors thought it worth while to publish this translation together with some brief explanatory notes.[6] The inadequacy of the Kühn edition which has been followed is partly responsible for some obscurities in the English rendering.

1. The Liver

[Book 6, ch. 8; Kühn II, p. 569 ff.] Now all these [organs][1] exist in all red-blooded animals, not only in the six genera.[2] And they all have livers too; and those which have livers, at any rate, have spleens and biliary ducts too, whereas a bladder to collect bitter gall is not attached to the liver in all. But the men who have written about all the [animals] which, they say, have no [gall] bladder, have not been right; for instance, Mnesitheus,[2a] concerning the elephant. For the elephant has a bladder on the liver and its size is proportionate to the entire viscus.[3] Its position is always the same in all the animals that have it, viz. on the largest lobe of the liver.

Now the number of the lobes of the liver is not the same in all animals, neither according to genus nor species. Similarly, the size of the lobes is not the same nor that of the whole viscus. Still, in greedy and cowardly

[5] Cf. footnote on p. 174 below.

[6] Cf. also Owsei Temkin and C. Lilian Temkin, Some Extracts from Galen's "Anatomical Procedures." *Bull. Hist. Med.*, vol. 4, 1936, pp. 466-476.

[1] I. e. stomach, intestines and other abdominal organs discussed in the preceding chapter.

[2] The question of the six genera of animals considered by Galen to be closest to man has been discussed by Max Simon, *Sieben Bücher Anatomie des Galen*, 2. Band, Leipzig, 1906, p. XXIII ff. It is not clear what vertebrates Galen included in this expression.

[2a] Mnesitheus, a physician from Athens, probably lived around 300 B. C.

[3] The question of the existence of the gall bladder in the elephant can be traced back to Aristotle who stated: "With the elephant also the liver is unfurnished with a gall-bladder, but when the animal is cut in the region where the organ is found in animals furnished with it, there oozes out a fluid resembling gall, in greater or less quantities." (*Hist. animal.* II, 15; 506 b; transl. by D'Arcy Wentworth Thompson, Oxford, 1910). Galen's contention, which is contradictory to those of both Aristotle and Mnesitheus, was analyzed by Daremberg who said: "Aristotle . . . and Cuvier . . . are also in accordance against Galen in refusing a gall bladder to the elephant" (*Oeuvres anatomiques, physiologiques et médicales de Galien*, t. I, Paris 1854, p. 305, footnote). According to F. W. Gorham and A. C. Ivy (General function of the gall bladder from the evolutionary standpoint, *Zool. Ser. Field Mus. Nat. Hist.*, vol. 22, 1938, pp. 159-213), a number of investigators from John Hunter to Eales (1929) have found no gall bladder in the elephant. The bile duct, however, is wide and long and has a large duodenal ampulla or "terminal bile pouch" (Gorham and Ivy). Assuming that Galen actually dissected the liver of the elephant, is it not possible that the presence of this peculiar pouch misled him into attributing a true gall bladder to the animal?

animals the liver is large and split into many parts, while in their opposites it is different. And where the liver is large, it is split into more and larger lobes than in man, although in men themselves the size and number of lobes is not alike in all.

* Herophilus, who wrote most accurately about it, says in his own words: "The liver of man is of good size and is large as compared with that of some other animals which are equal to man. And where it touches the diaphragm, it is convex and smooth, but concave and uneven where it touches the stomach and the convexity of the stomach. Here it is formed like a fissure and here, in the fetus, the vein from the umbilicus implants itself into the liver. Moreover, the liver is not alike in all, but differs as to width, length, thickness, height, number of lobes, unevenness in its anterior part where it is thickest, and around its farthest parts where it is thin. For in some it has no lobes but is entirely round and sloping,[4] in others it has two, in still others more, and in many it has four lobes." Now this has been rightly said by Herophilus and, furthermore, he has rightly stated in the same second book of his Anatomy that the liver extends somewhat to the left in but few men yet not in a few animals, although he mentions the hare only, leaving it to us to examine the other animals too, which I am intent to go through as my work proceeds,* whereas at present I discuss only as much as I need for my commentaries "On the use of the parts." Incidentally, however, I am compelled to mention not a few differences, as indeed even now in the case of the liver. The largest portion of it in all animals is on the right side, but in addition it also occupies some of the left, though not in all animals alike; rather, as Herophilus wrote, in the hare above all and, as I say, in all creeping animals too,[5] and in those where the liver is very large. And I said that in cowardly and greedy animals it is very large.

[Ch. 9 deals with the intestinal tract; ch. 10 first with the spleen, then turns to the dissection of individual abdominal organs, beginning with a description of probes and continuing, p. 574]: I use them [i. e. probes], as I said, by introducing them into the orifices of the vessels: in the liver into the portal vein which is called "stelechiaia"[6] by the younger anatomists, and into the double vein situated at the convexity and running

* The lines between the asterisks have also been translated by J. F. Dobson, Herophilus of Alexandria, *Proc. Roy. Soc. Med.*, vol. 18, Sect. Hist. Med., 1925, p. 27.

[4] "Sloping" is given as a possible meaning by Liddell and Scott (*Greek-English Lexicon*, new edition, s. v. ὄνορθος) who consider this passage corrupt.

[5] Galen's classification of creeping animals includes weasels and mice; cf. p. 537.

[6] I. e. "forming a trunk."

upwards and downwards; in the kidney into the branches from the big vessels which lie on the spine and into the ureters; and in the other [organs] in the manner I shall point out.

[Ch. 11] But first I must finish the discussion of the liver. Indeed, this viscus receives from the mesenterium the veins which extend to its most concave part. The place where all these [veins] gather is called "portae hepatis." Now here you will find in all red-blooded animals the very large orifice of a vein. Having inserted into this orifice one of the prepared probes (there should be several, some thinner, others thicker, so that the most fitting can be used) and pushing it gently forward along each lobe you should cut the above lying substance with a scalpel until you meet with the vein which contains the instrument that has been inserted through the "portae" into the viscus. The instrument is clearly seen lying beneath the thin coat. For it is customary among anatomists to call the bodies of vessels coats too, just as I said a short time ago concerning the stomach. I said that the latter had two coats, imposed one upon the other like some folds. But each of the veins in the liver has a very thin coat, the like of which does not exist in any other vein in the whole animal. When you have laid the vein bare without making an incision, remove the surrounding flesh of the viscus, the flesh that lies between the branching vessels.

For you will find that one large vein reaches from the "portae" into each lobe, however many there may be, that it divides up into many small veins like the trunk of a tree into branches, that these again divide into twigs, so to say, that these end in thin offshoots, as it were, and that the space between the vessels is all filled up with the flesh of the viscus. The followers of Erasistratus call this [flesh] parenchyma. With your fingers you will be able to remove this substance which you may call either flesh or parenchyma, and which lies like a cushion in all the spaces between the dividing vessels, so that the network of vessels in the one lobe into which you first put the prepared instrument will be left bare. For what you have seen in one lobe, you will find in all.

Now if the animal is of considerable size, you will be able to preserve, together with the veins, the biliary ducts and the arteries while you lay them bare in the liver as has been said. However, if the animal is small, you will not be able to preserve the three kinds of vessels quite to the end of each lobe. It is better, therefore, to undertake such dissections in other animals in which—even if the liver is removed from the entire body—the artery and the bile-vessel are clearly seen at the "portae," running along the vein as before the removal. But in small animals, the picture

is not clear at all after the liver has been removed; but before it has been removed, you can clearly see the first outgrowth of the artery into the liver. For the arterial vessel is somewhat whiter than the vein.

[Ch. 12] But you will not be able to follow its branching to the end. Yet if you observe diligently the region of the " portae," you will immediately see the duct from the biliary bladder reaching to the origin of the outgrowth of the bowels, not much below the so-called pylorus. In some animals you will see the pylorus outlined by a thickened part of the proper substance of the stomach; here the thin bowel first grows out from it. Some, however, do not believe that the name bowel should be applied before it winds itself into convolutions, and, therefore, some people simply use the name of " outgrowth," while others call it and its continuation the " duodenum." Where it receives the biliary duct, the latter sometimes sends off a small branch a little higher than the pylorus. And you will perceive a very small part running into the external membrane [of the liver] together with the vein ascending into the viscus, yet this part does not branch out into the depth [of the liver] together with the vein.

Having carefully observed all these things, pass on to the most convex part of the liver, dissecting the lobe in which you laid bare the veins at the concave part. For you will see that the veins at the convexity divide in a like manner, but without the arteries. Still less do the biliary ducts exist at this part of the viscus. The biliary (" cholodeis ") ducts are not only called thus but also " choledochoi," with the letter *o* or *e* in the second syllable,[7] in the same manner as the bladder on the large lobe of the liver is named. Here too you will see that the veins are thin and at the same time bare of any membranous envelope, such as exists in all [veins] in the mesenterium, which latter veins, therefore, some people believe to have two coats. Indeed, every vein has fibres which entwine it in various ways, but only one coat which is always its own, except where the vein takes an elevated course and is not firmly attached and needs must use certain membranes as covers and at the same time as props. But, about the coats of arteries I shall speak in the next section dealing with the anatomy of the heart.

2. Muscles Moving the Forearm

(Cf. figs. 1 and 2.)

[Book 1, ch. 11; Kühn II, 272] You will not be able to observe accurately the movements of the forearm towards the upper arm, in flexion or

[7] I. e. " cholodochoi " or " choledochoi."

in extension, before you lay the whole upper arm bare of all the surrounding muscles. So let us do it, keeping in mind that we said that the muscle lying upon the radius [1] reaches up to the humerus and that the muscle underneath this one, viz. the muscle that inserts into the metacarpus

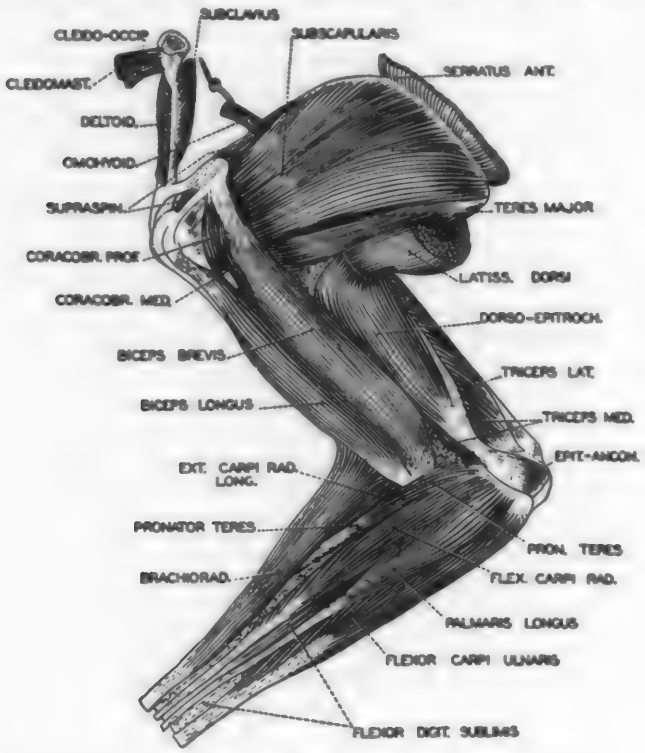


FIG. 1

Muscles of the right scapula, upper arm and forearm of the rhesus monkey, medial view. From Hartman and Straus, *The Anatomy of the Rhesus Monkey*, p. 129 (permission of The Williams & Wilkins Co.).

before the index and middlefinger,[2] also reaches up to the humerus a little distance away. As I said, it is better to preserve the heads of these muscles, or at least that of the one lying upon the radius.[1] For it will only become clearly visible to you when you have laid bare the foremost muscle of the

[1] M. brachioradialis.

[2] M. extensor carpi radialis longus and M. extensor carpi radialis brevis.

upper arm.[3] You will expose this muscle by paying attention to the following two marks: the vein that runs along the whole upper arm [4] and is called the "shoulder" vein, and the muscle that occupies the upper part of the shoulder [5]—perhaps it would be better to say that "forms"

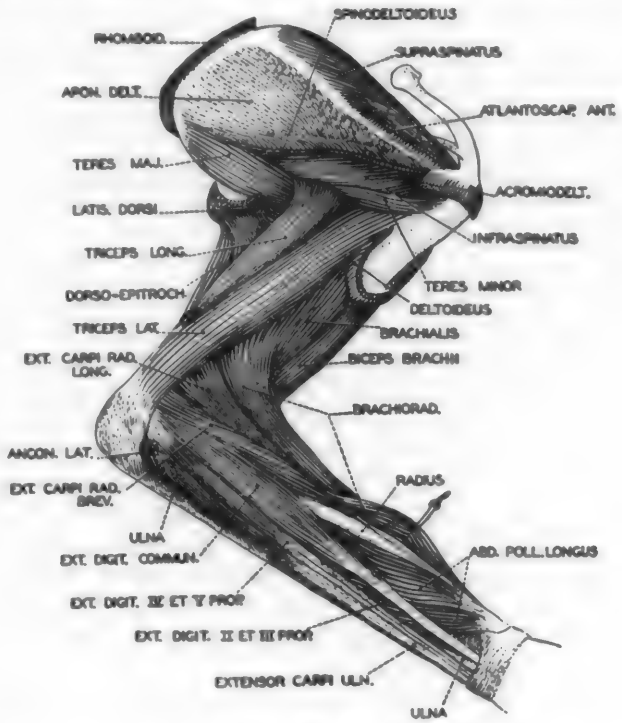


FIG. 2

Muscles of the right scapula, upper arm and forearm of the rhesus monkey, lateral view. From Hartman and Straus, *The Anatomy of the Rhesus Monkey*, p. 133 (permission of The Williams & Wilkins Co.).

the upper part of the shoulder, since it is the only muscle that lies upon this part. You should make the incision along the vein downwards and, of course, after having taken away the entire skin of this region, as well as all the membranes around the muscles. The incision in the upper part of the shoulder should be made by paying attention to the likeness and unlike-

[3] M. biceps brachii. [4] Vena cephalica. [5] M. deltoideus.

ness of the fibres, whereby you will perceive that the whole circumference of the muscle [5] reaches up to one apex and, like a triangle, is inserted into the upper arm. This muscle [5] belongs to the shoulder joint, and it alone among the muscles moving the shoulder joint has now to be removed, in order that the double head of the foremost muscle of the upper arm [8] become visible. Imagine that A B is the collar-bone, B C the spine of the scapula, that the muscles [composing the deltoid] originate from the first and third of these points, extend on one end towards B, on the other towards D, and that B is the acromion, D the extreme place of their insertion in the upper arm, and B D the whole insertion (cf. fig. 3).* It will be necessary to speak about this muscle [5] again when we narrate the muscles that move the shoulder joint. Now, however, remove this muscle after you have noted it, and follow what is said next.

The foremost muscle of the upper arm [8] which, even before dissection, is clearly visible along the shoulder vein [4] in all people, particularly in athletes, has two heads, one of which [6] is attached to the rim of the neck of the scapula, the other [7] to the apophysis which some people call ancyroeides [i. e. similar to an anchor], others coracoeides [i. e. similar to a raven's beak]. The ligament of each head is rather strong and not quite round. Now you should follow these heads as they extend downwards along the upper arm. For at the point where they unite, they produce this muscle which, however, is no longer lifted nor distant from the bones like its heads, but is forthwith grown to the bone of the upper arm, together with the other smaller muscle which lies underneath,[8] and on top of which it rides as far as the elbow joint. Here it forms its aponeurosis and brings forth a strong tendon by means of which it grows to the radius. Moreover, it takes a share in the membranous ligament around the joint, by means of which it also flexes the joint, bending it slightly to the inner side.

If this muscle is taken away, you will find another one lying underneath.[8] This muscle too clings to the upper arm from two fleshy origins, one in the back of the upper arm, the other one more in the front. The posterior head, however, reaches much higher. You will see that these heads also unite and form a muscle which becomes tendinous and, with the tendon produced, attaches to the ulnar bone, flexing the joint and bending it

* In macaques, the clavicular head of the deltoid arises from practically the entire length of the clavicle and not, as in man, from its lateral third alone.

[6] Caput longum of M. biceps brachii.

[7] Caput breve of M. biceps brachii.

[8] M. brachialis.

slightly outwards. But when both muscles [9] function exactly, the flexion of the joint is not inclined to either side. Thus there are two anterior muscles which, as has been said, flex the elbow joint, while three others, grown to one another, extend this articulation.[10] They should also be prepared as follows.

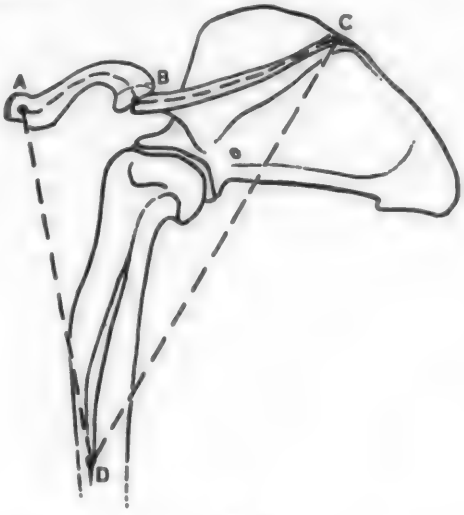


FIG. 3

Semi-diagrammatic drawing of left scapula, clavicle and upper humerus in the rhesus monkey. Broken lines and capital letters illustrate Galen's interpretation of the deltoid muscle.

First one has to dissect the muscle which lies in the inner parts of the upper arm below the skin.[11] It has its head near the limit of the posterior muscle of the arm-pit [12] (whose nature will be discussed in the anatomy of the muscles moving the shoulder joint). Its end reaches the elbow joint near the inner condyle of the upper arm and is membranous and thin. After this muscle has been removed, study two origins of the muscles which extend the whole forearm.[10] One of their origins [13] grows out from

[9] M. biceps brachii and M. brachialis.
[10] M. triceps brachii.
[11] M. dorso-epitrochlearis; this muscle is normal for macaques and other monkeys, but is absent in man (except as a very rare anomaly).
[12] M. latissimus dorsi.
[13] Caput longum of M. triceps brachii.

the inside of the shoulder blade, not from the whole but from approximately half of its upper part. The other one [14] grows out from the posterior part of the upper arm below its head. Advancing, these origins grow together at the upper arm and in their further advance they become attached to the bend of the ulna [15] by means of a broad tendon. If you follow the fibres from above in a longitudinal direction, this tendon will appear double to you, taking its external part from the first muscle mentioned before, and the internal part from the second. If you separate them from each other and endeavor to pull each part of the muscle, you will see that each of them extends the whole forearm, but that there is a difference regarding lateral inclination. For the first of the muscles mentioned effects an oblique inclination outwards, the second inwards. Beneath this one there is another muscle which surrounds the bone of the upper arm.[16] It is united with the second muscle and believed to be part of it by the anatomists. Thus it is if one considers this whole muscle as a double muscle. Nevertheless, it is possible to separate them from each other along the length of the fibres. And if you do this, you will find that this muscle remains entirely fleshy and grows into the posterior part of the elbow. If this muscle is pulled, sometimes a straight and direct tension around the elbow joint seemed to me to take place, sometimes it seemed to incline a little inwards.[17]

[14] Caput laterale of M. triceps brachii.

[15] I. e. the olecranon.

[16] Caput mediale of M. triceps brachii.

[17] Here as before, Galen makes statements concerning the actions of the muscles on the movements of the joints, into which he obviously was mislead by teleological considerations, as becomes clear from Book 2, ch. 16, of his "On the use of the parts" (for French translation, cf. Daremberg, *l. c.*, I, 206).

BIBLIOGRAPHIES

LEAVES FROM A BIBLIOTHECA OBSTETRICA *

M. PIERCE RUCKER

From a librarian's point of view the history of obstetrics begins in the sixteenth century. Besides the book of Soranus on gynaecology and obstetrics, what was known of the art of obstetrics in antiquity, is contained in a few chapters of various writers on general medicine and surgery. Hippocrates, Celsus, Rufus of Ephesus, Muscio, Galen, in the Graeco-Roman period and Oribasius, Priscianus, Aetius, Philumenos, Aspasia, Paulus Aeginata, Serapion, Rhazes, Ali Ben Abbas, Avicenna, Abulkasem, Avenzoar and Averrhoes, of the Byzantine and Arabic periods are names that stand out like beacons when one attempts to trace the tenuous early course of obstetrics. In the dark ages there is Constantinus Africanus who brought the knowledge of the Arabians back to Europe, and Trotula, Albertus Magnus, Bernard von Gordon, and Savonarola, who barely kept the torch aflickering. Most of the knowledge was hearsay and was handed down from century to century. In the Middle Ages men were forbidden to attend women in confinement, so what they wrote was borrowed knowledge, if one could call it knowledge. In 1522 Dr. Wertt of Hamburg disguised himself as a woman in order to gain first hand knowledge. All he got for his pains was a death at the stake.

The Renaissance for obstetrics begins with two encyclopedic works on diseases of women. In 1566 Caspar Wolff published a little work that contained the gynecologic knowledge of all time, and in 1586 Caspar Bauhin published an enlarged version which was republished with additions by Israel Spach in 1597. Bauhin also translated and added an appendix to Rousset's work on Caesarean section as we shall see later. The Miller Library of the Richmond Academy of Medicine also has a work of his on monsters. Bauhin was professor of Anatomy, Botany, Medicine, and Greek at Basel. His work on Anatomy was widely copied by the anatomists of the Renaissance, and his Botany was the most widely used since Dioscorides. For these reasons and on account of his magnificent beard I have chosen him to represent the gynecologic cyclopedists and to lead the procession of authors that we will review tonight.

The first work that was wholly devoted to obstetrics is Rösslin's Rosengarten, *Der Swangern Frawen und Hebammen Roszgarten*, to give it its

* Read at the History of Medicine Section of the Richmond Academy of Medicine on March 3, 1945.

full name. This appeared in 1513. It is a summary of Hippocrates, Galen, the Arabian physicians, especially Avicenna, along with additions from Albertus Magnus, Gordon and Savonarola. Rösslin discusses post-mortem Caesarean section and is responsible for the misconception that Julius, the first Kaiser was called Caesar because he was cut out of his mother's womb.

This book went through a great number of editions. The Miller Library has a facsimile of the 1513 edition, a Latin edition published in Venice in 1536; a French edition, Paris, 1536; a German edition published in Frankfurt by Egenolf in 1580 and another by Egenolf in 1594. It also has a plagiarized edition by Walter Hermann Ryff, Frankfurt 1545, which has a most unusual frontispiece in two colors. It is a sort of overture in Pediatrics and shows the various pediatric procedures of the time; warming the baby before the fire and putting the baby to the breast, a baby in a perambulator, a larger one being rocked in a cradle, a still larger one being fed from the table. It also shows delivery on a birth stool. Ryff has come down to us as the arch-plagiarist. Vesalius complained of him not so much because he copied his woodcuts, but because he cut them down in size and miserably reproduced them. He is not to be confused with Jacob Rueff, 1500-1558, who brought out an improved edition of Rösslin in 1554. The Miller Library has a Latin edition of Rueff, 1580, and a Dutch edition, 1591.

Rösslin was an apothecary in Freiburg i. B. and later city physician in Frankfurt. His son, also named Eucharius, changed his surname to the Greek form, Rhodion. He brought out some of the later editions of his father's work. The 1513 edition has as a frontispiece a picture of the elder Rösslin presenting his book to Catherine, Duchess of Brunswick.

The Rosengarten was translated into English under the title of *The Byrth of Mankynde*. It contains the first examples of copper engraving in England and was a best seller for more than a hundred years. Just how many editions there were, is impossible to say, for in the XVIth century it was customary to reset the type of an ordinary book after 1,250 copies had been printed in order to give the compositors steady work. They had "planned economy" even 500 years ago. Sir D'Arcy Power made a study of the various issues, as he preferred to call them, and their printers, and tried to bring some order out of the confusion by studying the capital letters. I have Sir D'Arcy's own copy, the 1552 edition with his bookplate and also Ballantyne's bookplate, and a letter from Ballantyne to Power concerning the illustrations of the book. I have also the last edition, 1654, which is a crude work typographically, compared with the

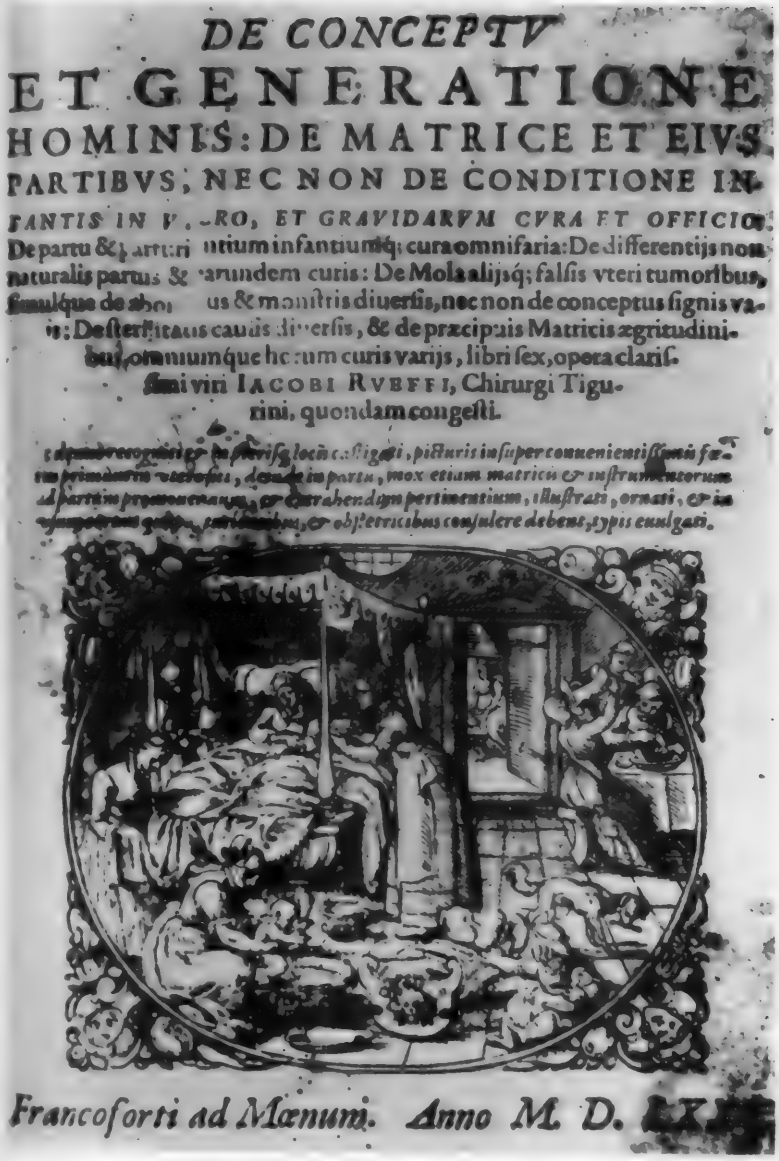

DE CONCEPTV
ET GENERATIONE
HOMINIS: DE MATRICE ET EIVS
PARTIBVS, NEC NON DE CONDITIONE IN-
FANTIS IN V. RO, ET GRAVIDARVM CVRA ET OFFICIO
De partu & partiri ntium infantium q; cura omnifaria: De differentijs non-
naturalis partus & arundem curis: De Mola alijs q; falsis vteri tumoribus,
simulque de abor us & monstris diuersis, nec non de conceptus signis va-
ris: De sterilitatis causis diuersis, & de præcipuis Matricis ægritudini-
bus, omniumque horum curis variis, libri sex, opera clarisf.
simi viri IACOBI RVEFFI, Chirurgi Tigu-
rini, quondam congesti.
Francoforti ad Mœnum. Anno M. D.

Fig. 1.

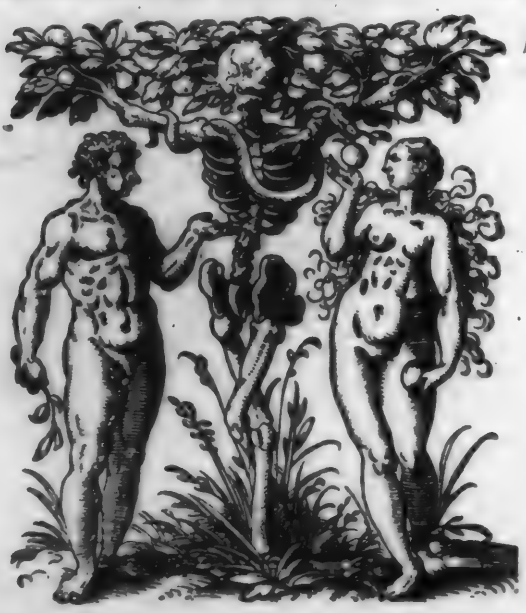
Title-page of Jacob Rueff, 1580. Miller Library, Richmond Academy of Medicine.

1 1

LIBER PRIMVS
DE GENERATIONE
HOMINIS.

CAPVT I.

De genitali semine, quid sit, vnde & quomodo nascatur.



PRecreationem naturalem hominis, talem cum in cæteris animantibus, quales cum vniuersi generis stirpium generationem animaduertimus. Vt enim illæ ex semine sui quæque generis telluri concreto missoque germinant, augentur, &

Fig. 2.

Illustration from Jacob Rueff, 1580.

CAPVT II.

De mixtura vtriusque sexus seminis, eiusque substantia & forma.

Postquam autem uterus, quod genitale fœminei sexus membrum est, virigenituram conceperit, suum quoque semen illi admiscet,

Fig. 3.
Picture of a delivery. Jacob Rueff, 1580.

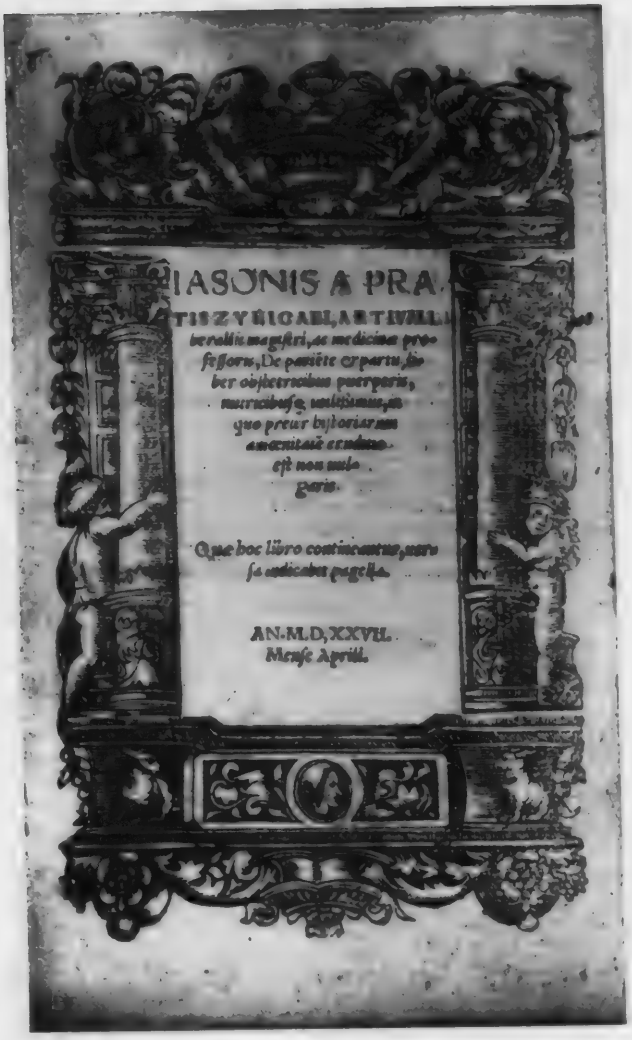


Fig. 4.

Title-page of Jason à Pratis, 1527. Miller Library, Richmond Academy of Medicine.

earlier issues. The Academy of Medicine has a 1565 edition which is the one described in the Osler catalogue.

Not only is there confusion concerning the various imprints of this work, but there is also much uncertainty about the identity of the translator. The title pages of all issues, save the first, say that he was Phisition, or Doctor of Physick, according to which issue you have before you. The first three editions were printed by " T. R." or " Tho. Ray " whose name like the editor's, was Thomas Raynalde. Ballantyne is of the opinion that these are two different persons.[1] Power, on the other hand, considers them to be one and the same.[2] Two persons named Thomas Raynold were at Merton College, Oxford, in the first quarter of the 16th century; (i) Thomas Raynoldes who was Fellow of the College in 1526 and afterwards Warden, and (ii) Thomas Raynolde who graduated B. A. in 1518/19, and who was secretary to Queen Catherine Parr from 1544 to 1547. There is no evidence that our publisher and/or translator was either of these. All that is known about him is that he was printing before the Stationer's Company was founded in 1556; that he was living in Finsbury in 1540, at the Wardrobe in St. Andrew's Parish in 1548, and at the Star in St. Paul's Churchyard from 1549-1552. He probably died at some time between 1555 and 1557. The City of London Repertory has an inventory of his possessions dated 20 August 1540 and sworn to by Thomas Mannyng, John Borrell and John Day, late servants to Thomas Raynaldes, printer. Besides wearing apparel the list includes:

> Item, iiij bokes of Vincentius' workes.[3]
> It. a greate boke called Arnoldus de villa noua.[4]
> Item ij herballs one in Latten, and the other in Englisshe.
> It. a boke of colloquium erasmi.
> Item a boke of David's psalter in latten.
> Item. a boke of M. Elyott's Diccionary.[5]
> Item. a boke of Adagia Erasmi in great volume.
> Item. a boke of Marshalls Epigrames.[6]

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[1] J. W. Ballantyne in *J. Obstet. and Gynaecol. Brit. Emp.*, 1906, X, 297-325; XII, 175-194, 255-274.

[2] D'Arcy Power in *The Library*, 1927, series 4, VIII, 1-37.

[3] Vincent of Beauvais was the encyclopedist of the Middle Ages. All the printed editions of his work were in four parts.

[4] Arnaldus Villanovanus, [Fr. Arnauld de Villeneuve] a celebrated physician born about 1235 was said to have possessed all the medical and chemical knowledge of his day. He died in 1313 on his way to Avignon to visit as a physician, Clement V, who had sent for him.

[5] Sir Thomas Elyot's *Latin Dictionary* was finished in 1535.

[6] Marcus Valerius Martialis, the father of the epigram, was born in Bilbilis, Spain

> It. ij ffygures graven in copper the one the man the other woman with their Intrayles thereto belonging.
> Item. certeyn greate capytall letters graven in copper. . . .

The Arnald of Villanova and the two herbals give the list a certain medical flavor, but it certainly is not what you would expect in the library of a XVI century physician. After all, we have only Raynalde's word for it that he was a physician.

In the prologue, Raynalde has a word about the title. He says " about three or four years before I took the Book in hand, a certain studious and diligent clerk (Richard Jonas) at the request and desire of divers honest and sad Matrons, being of his acquaintance, did translate out of Latin into English a great part of this Book, entituling it, according to the Latin inscription, *De Partu Hominis*, that is to say, *Of the Birth of Mankind*: which we now do name, *The Womans Book*." Later on in the prologue he says " if by my pains this little Treatise were made to speak English, as it hath been long since taught to speak Dutch, French, Spanish and divers other languages " he were entitled to the thanks of all honest Matrons. In speaking of the 1565 edition, Osler [7] says the prologue, most of book 1, and chapter 6 in book 4 (on embellishing or bellifying Medicines) are by Raynalde. Chapters 1-5 of book 4 are by Jonas, and books 2-3 are Rösslin.

The second work on obstetrics is by Jason à Pratis. The Miller Library has the first edition, 1527, and also the second, 1657. Both editions are rare, and the first edition is extremely rare. No other copy is listed in the Union Catalogue of the Library of Congress. It gives a contemporaneous description of antepartum, intrapartum and postpartum care, breech delivery, the kneeling posture, care of the infant, instillation of oil into the infant's eyes, etc. Jason is skeptical about the influence of odors upon the behavior of the uterus, contrary to the belief generally held at the time. The ancients believed that the uterus wandered about in the abdomen like an animal and could be attracted or repelled by odors either per vaginam or per nasam.

In 1939 Herbert Spencer translated the second (1657) edition. I have his ms. copy, the other being in the Library of the Royal College of Physicians. Spencer spent a great deal of time getting together all that is known of the author. I know that he and Professor Miles Phillips made a pilgrimage to Jason's birthplace and searched for his tomb.

between 38 and 41 A. D. and died there not later than 104 A. D. He lived for 35 years in Rome.

[7] *Bibliotheca Osleriana*, No. 3821.

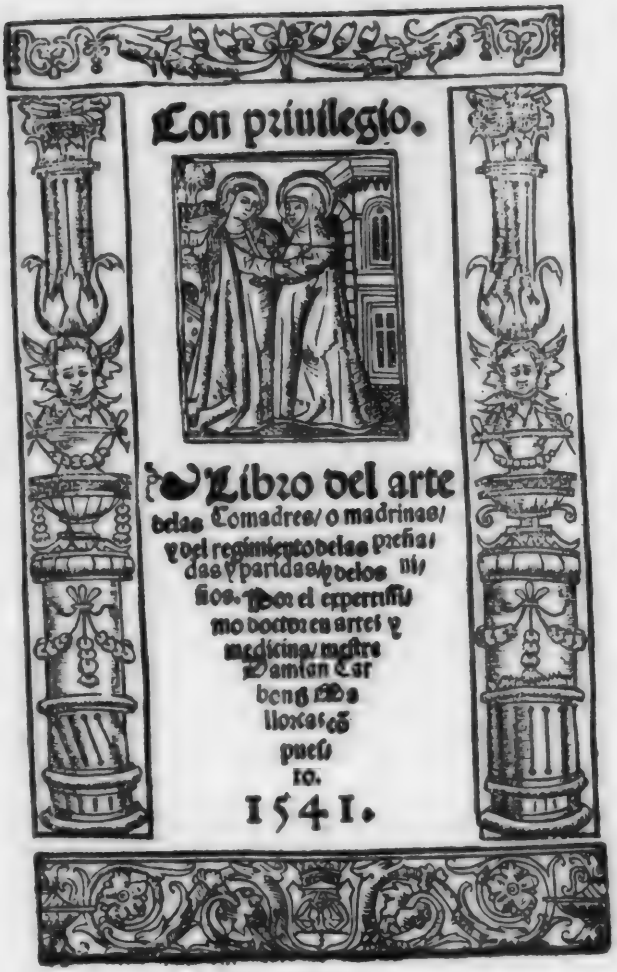


Fig. 5.

Title-page of Carbon's *Libro del arte de las Comadres*, Mallorca, 1541.

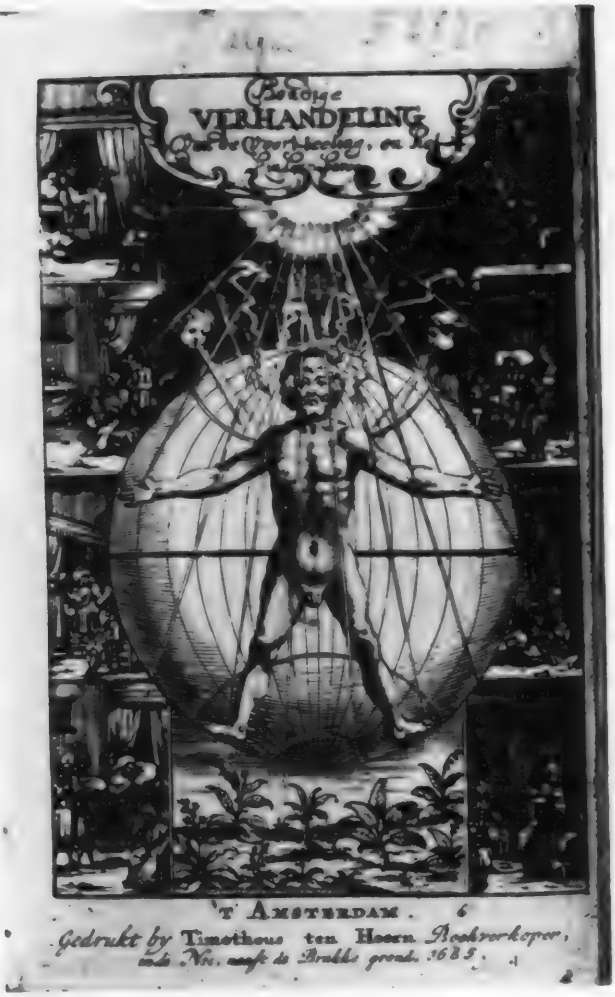


Fig. 6.

Frontispiece of Jansen's work, 1685.

Spencer has the following to say about our author. "Jason à Pratis, also known as Jason Pratensis, though his real name was Jason van de Velde or van de Meersche, was born in Zyriksee in the island of Zeeland in 1486 and died in his native town in 1558. His father, Thomas P., was also a physician. Jason apparently studied at the University of Louvain and in Antwerp under the Surgeon Marturus Hessel. He became body-physician to Maximilian of Burgundy and lived at Veere, Maximilian's residence, for a time. From 1541-1545 he again resided at Zyriksee. In 1548 he became a burgher of Veere where he filled the office of alderman (or sheriff) from 1549-1559(?). He then returned to Zyriksee, where he died on 22 May 1558." He published:[8]

De uteris libri duo, Ant. 1524, Amst. 1657.
De pariente et partu, Ant. 1527, Amst. 1657.
De arcenda sterilitate et progignendis liberis, Ant. 1531; Amst. 1657.
De tuenda sanitate libri quatuor, Ant. 1538.
De cerebri morbis liber, Basel 1549.
Sylva carnunum adolescentiae, Ant. 1530.

The rarest book in the Miller Collection is Damian Carbon's *Libro del arte de las Comadres* . . . Mallorca, 1541. Only three copies are known. The other two copies are (or were) in Spain. Dr. Miller in an address in Kansas City in 1929 described this book in detail. He began his address with a quotation from Coke as follows: "A collector is usually thought a crank by his acquaintances, a nuisance by his friends, a miser by his relatives, a blessing by the dealers, and a deluded idiot by everyone concerned." Dr. Miller agrees that all this may be so, but that it is far outweighed by the happiness he gets when he exhibits his treasures. It is the happiness that I am enjoying now, albeit vicariously, in showing some of the treasures of the Richmond Academy of Medicine which Dr. Miller has collected for us.

Carbo, or Carbon, as he later spelled his name, was a doctor and a poet of Majorca. He wrote his treatise on the duties and selection of a midwife in the form of a letter to a Spanish nobleman on the occasion of the noble lady's first pregnancy. When it was published, the Inquisition objected to two passages on seminal emission and endeavored to make these passages illegible. The three known copies have the same erasures. I thought that you might be interested to see how the Inquisition treated books it only mildly disapproved of.

S(amuel I(ansen), *Korte en bondige Verhandeling, van de Voort-*

[8] These particulars are extracted from the *Biog. Lexikon*, ii ed., Vol. iv, p. 669.

teeling en 't Kinderbaren met den aenkleve vandien. Amsterdam, Timotheus Hoorn, 1688. (The frontispiece is dated 1685). The dealer who sold the book to Dr. Miller says that "this very uncommon obstetrical and embryological work seems to be unrecorded and undescribed." We only have found a copy in the Index Catalogue of the Library of the Surgeon-Generals's office. The book is of singular interest for its very instructive and at the same time curious illustrations. Dr. Miller's note is that no copies are in British Museum, Royal College of Physicians Library or in the French and other large continental European library catalogues. The illustration of a Dutch delivery has been largely copied (Ploss & Bartels, Haggard in *Devils, Drugs* and *Doctors*, and Palmer Findley in the *Story of Childbirth*). According to Baas, Jansen was connected with the history of the forceps in Holland. When Hugh Chamberlen was forced to flee to Holland, where he sold his secret (the forceps) to Roger Roonhuysen, the vectis had already been procured by Samuel Jansen from Hugh Chamberlen's brother, Paul, in England.

The Miller Library has a good collection of the works of the celebrated midwives. Trotula de Ruggieri (or Eros) is represented by *De mulierum passionibus ante, in et postpartum* . . . Leyden, 1572, which contains one of the earliest descriptions of a perinaeorraphy. Trotula is said by some historians to have been one of the female physicians who proceeded from the school of Salerno. Others consider her a myth. Daremberg thinks that she was the wife of John Patearius, the elder, who flourished in the eleventh century. Osler characteristically sums up the question as follows: "The first woman professor has been deprived of more than her chair by the unchivalrous mythoclasts of the school of Sudhoff: 'The good wife Trotula passed long ago into the fairy tales as Dame Trot.' . . . Alas! she too had no real existence. The very word Trotula is due to a misunderstanding. One Trottus there was, a doctor of Salerno and a mere male, and his works, or rather his compilations, according to a common habit of the Italian schools, were spoken of as 'The Trotula.'" Nevertheless, Osler was fond of the name and often used it when referring to female doctors.

Louise Bourgeois, the great French midwife, is represented by a German translation of 1619, a Dutch edition of 1658, and a 1642 Paris edition. She was a pupil of Ambroise Paré and one of the first women to write on obstetrics. She was midwife to Marie de Medici and was a skillful operator. Jamison thinks that she got her idea of inducing premature labor in patients with contracted pelvis from Paré's practice of inducing labor in cases of uterine hemorrhage.

Marguérite (du Tertre, widow) de la Marche, 1638-1706, is represented by *Instruction familière et très facile . . . touchant toutes les choses principales qu'une Sage-femme doit savoir.* Paris, 1677. The author was a master midwife and teacher in Paris.

Justina Siegemundin, gebohrne Dittrichin, *Ein höchstnöthiger Unterricht von schweren und unrecht-stehenden Geburten . . .* Berlin 1708. The author was a great German obstetrician, Court Mid-Wife of Prussia, and occupies the same position in German Obstetrics that Louise Bourgeois does in French. She kept careful notes of her cases, and when she published her book in 1690 it reflected the best obstetrical thought in Germany at that period.

Elizabeth Nihell, Professed Midwife, *A treatise on the art of midwifery,* London, 1760, the best known of the English midwives, is chiefly remembered for her vicious denunciation of William Smellie. I could not repeat in this audience many of the things she printed about him. One of the mildest was that a man midwife is an anomaly in both name and fact.

Madame Le Boursier du Coudray whose *Abrégé de l'art des accouchemens,* 1769, is one of the earliest obstetrical works to use illustrations in color, not only taught midwifery in Paris, but with the king's permission went about the provinces giving courses for midwives. She was one of the first to use a manikin, an invention of her own, for demonstrating the positions of the fetus and the mechanism of labor.

The last midwife, whose work is in the Miller Collection, is Madame Boivin, perhaps the greatest of them all. I have her *Mémorial de l'Art des Accouchemens . . .* 1812 and the Academy of Medicine, the 1836 edition. She was a pupil of Mme. LaChapelle. She also wrote authoritatively on the origin and treatment of moles and on the diseases of the uterus and its adnexa. She was concerned with the pathological aspects of her subject more than any other woman writer; more than any male writer of the time, for that matter.

William Harvey's discovery of the circulation of the blood, was so epoch-making that we lose sight of his very important work on generation. Besides being the father of physiology, he is called the father of British Midwifery. The title page of his *Exercitationes de generatione animalium,* 1651 is quite attractive. The experts disagree as to Harvey's position on the doctrine, *omne vivum ex ovo.* The title page seems to indicate that he was a firm believer in that law.

The Miller Library has an interesting collection of works illustrating the development of the obstetric forceps, including some 16 pamphlets in Dutch that treat of the time when the secret of the forceps was held by a

closed corporation of paid membership, but I fear we have not time to go into that. I do want to say a word about an interesting little work, *The power of the mother's imagination examined*. My copy bears the date of 1720 which is an error. It should be 1729. In 1727 Blondel published a pamphlet entitled *The strength of the imagination in pregnant women examined: and the opinion that Marks and deformities in children arise from thence, demonstrated to be a vulgar error. By a member of the College of Physicians*, London, 1727.

James Augustus Blondel, d. 1734, was a native of Paris and received his medical education at Leyden, where he graduated M. D. in 1692. He settled as a physician in London and was admitted licentiate of the College of Physicians in 1711. To his anonymous treatise, Dr. Daniel Turner replied in the twelfth chapter of his treatise on the Diseases of the Skin, and he returned to the subject in his treatise on Gleets. In answer to the statements of Turner Blondel published in 1729 *The power of the mother's imagination examin'd. In answer to Dr. Daniel Turner's book intitled A defense of the XII chapter of the first part of a treatise, De Morbis Cutaneis*. Blondel argues that imagination cannot act beyond the sphere of the soul and of the body. Since there is neither communication of spirits between the mother and the fetus, nor circulation of blood from one to the other, they do not make one and the same individual. His arguments are very thorough and not without humor. For instance, he says " why should we be surprised at some irregularities on the skin and other parts of the body? Don't we see the like every Day upon Vegetables, though they are not capable of *Imagination*? They have their Moles, their hairy Parts, their Discolorations, their Excrescences and, now and then, such odd Shapes, as to make strange Representations of Animals, or other Things, and all this without the Help of *Fancy*." As he takes up one by one Turner's statements, you are put in mind of the final essay of Oliver Wendell Holmes upon the contagiousness of puerperal fever. The discussion continued long after Blondel's death. Bound with my copies of Blondel's two treatises is a pamphlet by a John Henry Mauclerc, *Dr. Blondel confuted or the ladies vindicated with regard to the power of imagination in pregnant women*: . . . London, 1747. Blondel's work was published in French at Leyden in 1737, in Dutch at Rotterdam the same year, and in German at Strasbourg as late as 1756.

Finally, I wish to say a word about Caesarean section because, as Eastman has shown, the early American operations had a profound influence

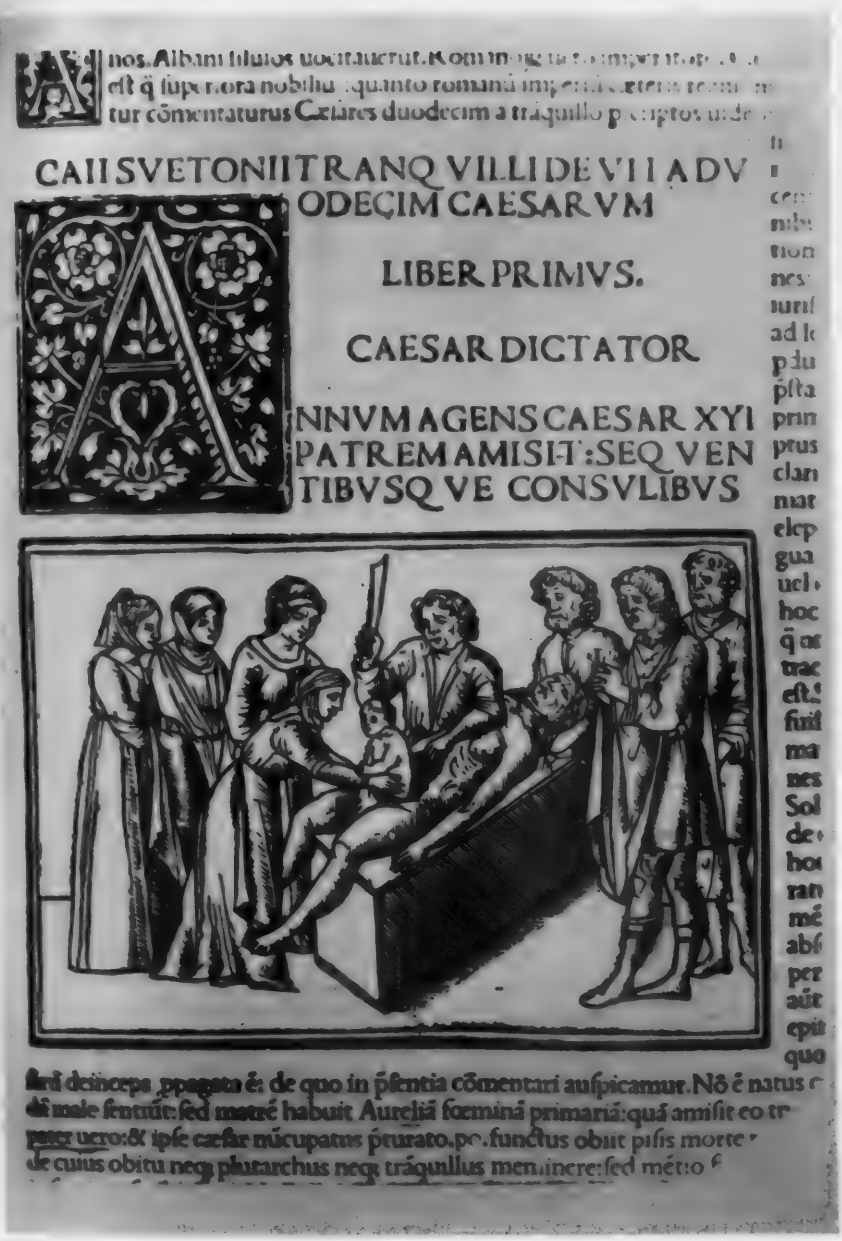


Fig. 7.

The first illustration of a Caesarean section. Suetonius, 1506.

Fig. 8.

Illustration of Caesarean section from Murcurio. Miller Library, Richmond Academy of Medicine.

Fig. 9.

Second stage of the operation as shown in Fig. 8.

upon Sänger when in 1882 he published his work which was the beginning of the modern operation, and because the first of these American operations was performed in the Valley of Virginia by Jesse Bennett upon his wife, and the first operation in which stitches were used in the uterus was performed in Occoquan. The latter operation was recorded by Dr. M. L. Weems of Alexandria in the *American Journal of Medical Sciences* (Vol. 18). It was performed by an irregular practitioner of Fairfax County.

The first successful Caesarean section ever performed anywhere in the world, was in 1500 by Jacob Nufer, a Swiss sow-gelder, upon his own wife. By 1581 François Rousset was able to report fifteen successful operations. The Academy has the 1591 edition which contains Caspar Bauhin's comments on Rousset's work. Bauhin gives an account of the first section performed on a living woman, that of Jacob Nufer at Sigerhausen, Switzerland. The first printed illustration of a Caesarean section is not in a medical book, but in the lives of the 12 Caesars by Suetonius. The first edition (1506) has the illustration in the text. In the second edition, this illustration was moved to the frontispiece. *La Commare o Riccoglitrice*, the earliest Italian work on obstetrics, has a picture of the Caesarean operation. It also has illustrations of the kneeling posture and the hanging legs position. The latter goes by the name of the Walcher position after the German who described it over a hundred years later. The Miller Library has the 1621, the 1642, and the 1652, and the 1686 editions of the work. The author, Scipio Mercurio, 1568-1615, was a Dominican monk who turned surgeon and practiced in Rome. He saw the sections done while traveling in France. On account of the high maternal mortality the operation fell into disrepute and its performance was actually forbidden in Paris.

The chief cause of this mortality was infection and hemorrhage. No sutures were put in the uterus. Robert P. Harris of Philadelphia has published a number of studies on the sections that had been done in America. He showed that when the operation was done before the womb had become exhausted by prolonged labor, the organ contracted well, and there was less spill into the peritoneal cavity. Consequently the patient had a better chance for recovery. In one of his papers he showed that when the operation was done by an infuriated bull, more patients recovered than when the operation was performed by the best New York surgeons. Harris, as I said, was a Philadelphian. The care that he took to get correct details is shown by a Ms. I have entitled *Untruthfulness, an*

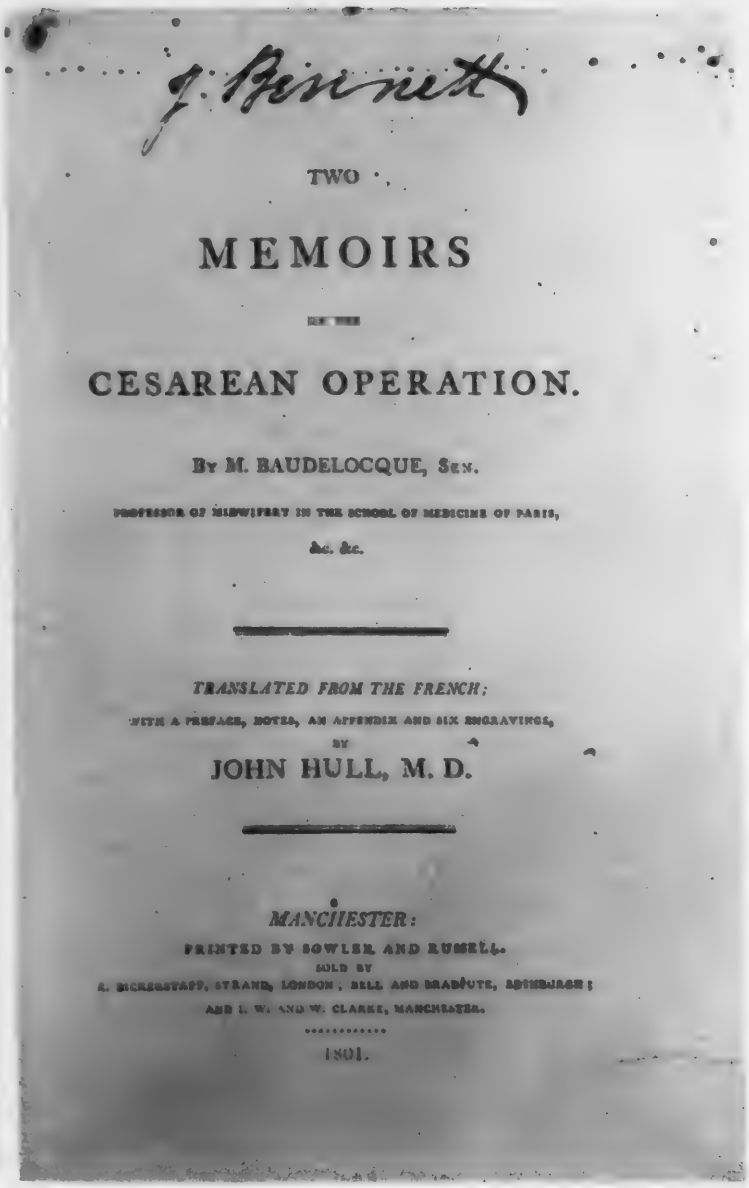
Fig. 10.

Silhouette of Jesse Bennett who performed the first Caesarean section in the United States. Richmond Academy of Medicine.

Fig. 11.

JESSE BENNETT.

From Dr. Joseph L. Miller's article describing the first Caesarean operation in this country. Courtesy of the *Virginia Medical Monthly*.


J. Bennett

TWO

MEMOIRS

ON THE

CESAREAN OPERATION.

By M. BAUDELOCQUE, Sen.

PROFESSOR OF MIDWIFERY IN THE SCHOOL OF MEDICINE OF PARIS,

&c. &c.

TRANSLATED FROM THE FRENCH:

WITH A PREFACE, NOTES, AN APPENDIX AND SIX ENGRAVINGS,

BY

JOHN HULL, M. D.

MANCHESTER:

PRINTED BY SOWLER AND RUSSELL.

SOLD BY

A. SHERRATT, STRAND, LONDON; BELL AND BRADFUTE, EDINBURGH;

AND J. W. AND W. CLARKE, MANCHESTER.

1801.

Fig. 12.
Title-page of Bennett's own copy of Hull's translation of Baudelocque's *Memoirs on the Cesarean Operation.* Miller Library.

21st and 22d. LAMBRON, Surgeon at Orleans, has performed the same operation twice upon one woman (1), who has since laboured very fortunately. She was operated upon the first time, on the 9th of August 1775, and the second time on the 30th of December 1779.

23d. DUMAY, Surgeon at Fontenai-le-Peuple, performed the same operation on account of a rupture of the uterus, although the fœtus had not penetrated into the belly, on the 4th of Germinal in the 4th Year, (23d March 1796) and on the 30th day the wound was not larger than a shilling (2).

24th. Finally Mr. BACQUA has performed the cesarean operation more recently, namely on the 25th of Floreal in the 5th year, (14th May 1797) and has met with all the success, that could bedesired from it (3).

25th 14 June 1794 J.B. on Ed.

up 9 Feb
walked
15 Feb
cured on
1 March

(1) The womb of this woman was lacerated in two successive labours and the infant, each time, passed completely into the cavity of the abdomen.

(2) This observation, highly interesting to the progress of the art, will be published at full length in the Recueil, when the further account of it, which has been requested, shall be received.

(3) See *Recueil Périodique*, pag. 434, tom. IV.

Fig. 13.

All the written record there is of the first Caesarean operation in the United States. Miller Library, Richmond Academy of Medicine.

obstacle to correct statistical research. A Louisiana Caesarean operation with three claimants. Dr. Harris was 13 years in solving this case and it involved an extensive correspondence in two languages between Philadelphia, on one hand, and Louisiana, Ohio, and even France on the other.[9] Harris' careful statistics, showing as they did the advantage of suturing the uterus were used by Sänger in his classical work *Der Kaiserschnitt bei Uterusfibromen*, Leipzig, 1882.

The item that has the greatest association interest is Dr. Jesse Bennett's own copy of Hull's translation of Baudeloque's work on Caesarean section, a report of 31 successful cases. The title page bears Jesse Bennett's signature and on page 71 after the 24th case, Bennett has written " 25th 14 Jany. 1794 J. B. on E. B. up 9th Feby. Walked 15 Feby Cured on 1 March." This is all the record there is of the first abdominal delivery in the United States. When asked years later why he did not report the case, he replied: " no doctor with any feelings of delicacy would report an operation he had done on his own wife." Another time he said: " no strange doctors would believe that operation could be done in the Virginia backwoods and the mother live, and he'd be damned if he would give them a chance to call him a liar." He evidently had definite opinions about the operation, what to do and what not to do, for a number of passages of his book are underscored. On page 72 he underlined " *the operation is not essentially mortal.*" On page 73 he noted the following: " *if he had not introduced a catheter into the deepseated collection of matter which threatened the most dreadful consequences*, Mr. Baqua, like many others, would have failed in attaining the end, which he proposed to himself, and *would have furnished* an additional arm to the adversaries to the caesarean operation, in making them *acquainted with another victem.* Vermond owed the preservation of the patient *whom* he delivered of two healthy children, entirely to his introducing a sonde de poitrine." Thus we see what Bennett thought of drainage when there was a collection of pus. However, in Mrs. Bennett's case, he closed the abdomen without drainage. Before doing so he removed both ovaries, remarking as he did that he would not be subjected to such an ordeal again.

In conclusion, I wish to publicly acknowledge my indebtedness to Mrs. Mary Nokely Godbold, for getting the gaps in my series of slides filled and for arranging an exhibition of the books that I have discussed.

[9] Cf. William Dosité Postell, A Cesarian section with three claimants, *Bull. Hist. Med.*, 1944, 16: 65-71.

THE MILLER COLLECTION IN THE LIBRARY OF THE RICHMOND ACADEMY OF MEDICINE

COMPILED BY MARGARET N. BURKE

In 1926 Dr. Joseph Lyon Miller, an alumnus of the Medical College of Virginia and a practicing physician in Thomas, West Virginia, offered to the Richmond Academy of Medicine a valuable collection of old medical books which he had been assembling for a number of years. To house Dr. Miller's gift, as well as to secure a home and place of meeting, the Academy, in 1932, completed a new building, at Twelfth and Clay Streets, adjoining the library of the Medical College of Virginia.

The Miller Collection includes rare portraits, prints, letters, and silhouettes of medical significance besides its 1600 volumes, more than half of which are of unusual interest. Among the important items are Andreas Vesalius's *De Fabrica Humani Corporis*, second edition, rich in book plates of former owners; Guy de Chauliac's *Chirurgia Magna*, 1499; Aureolus Paracelsus's *Chirurgia Magna & Minor*, 1573, some of its pages blotted out by the hot irons of the Inquisition; the exceedingly rare first English edition of Ambrose Paré's *Works*, 1634; Carbon's *Libro del Arte*, of which only four copies are known to be in existence; Pratis's *De Pariente et Partu*, thought to be the only copy in America; and the first English edition of William Harvey's *Anatomical Exercitations*, 1653, one of thirty-five copies originally offered for sale.

A check list of the rarer items in the library is herewith printed for the first time.

WYNDHAM B. BLANTON.

ABERNETHY, JOHN (1764-1831): Surgical observations, part the second. *J. Nichols & Son*, 1806. 245 p. 21 cm.

———: Surgical observations, on the constitutional origin and treatment of local diseases. *Philadelphia, Printed for Thomas Dobson*, 1811. 325 p. 21½ cm.

ACLAND, HENRY W.: The Harveian oration 1865. *London, Macmillan & Co.* 1865.

ADAMI, J. GEORGE: Pathological Discovery and Its Bearing upon Preventive Medicine. *N. Y. Medical Journal, Vol. LXXXIX, No. 12* Pp. 570-575.

The Aesculapian. A quarterly journal of medical history, literature and art. Ed. by Albert Tracy Huntington. *Brooklyn, N. Y.*

AETIUS AMIDENUS (6th Cent. A.D.): Opera, libri XVI, in tres tomos divisi . . . *Basileae, In officina Froben*, 1535. 31½ cm.

After the Battle. *Eclectic. Nov., 1863.* Reprint from *Bentley's Miscellany*. Pp. 365-369.

AGNEW, D. HAYES: Lecture Introductory to the One Hundred and

Fifth Course of Instruction in the Medical Department of the University of Pa. *Phila., R. P. King's Sons*, 1870.

AGRIPPA, HEINRICH CORNELIUS (1486-1535): The vanity of arts and sciences . . . London. *Printed by F. C. for Samuel Speed*, 1676. 368 p. fronts. 17½ cm.

AIKIN, CHARLES R.: A concise view of all the most important facts which have hitherto appeared concerning the cowpox. *London, Printed for R. Phillips*, 1801. vi, 102 p. plate 16 cm.

AITKEN, JOHN (-1790): Essays on fractures and luxations . . . London, *Printed for T. Cadell*, 1790. xi, 173 p. 7 engr. plates 22½ cm.

———: Principles of midwifery, or Puerperal medicine . . . 3rd ed. *London, J. Murray*, (n. d.). xiv, 210 p. 20½ cm.

AKENSIDE, MARK (1721-1770): The pleasures of imagination, to which is prefixed a critical essay on the poem by Mrs. Barbauld. *London. Printed for T. Cadell, etc.* 1795. 156 p. engr. fronts and plates 16 cm.

ALBERTUS MAGNUS (1193-1280): De secretis mulierum, item de virtutibus herbarum, lapidum et animalium . . . *Amstelodami, Henricus et Theod. Boom*, 1669. 329 p. (6) 13 cm. Bound with: I. Pinaeus, Severinus . . . De virginitatis notis, graviditate et partu, 1663. II. Bonaciolus Ludov . . . De conformatione foetus, accedunt alia.

———: Daraus man alle heimligkeit des weiblichen geschlechts erkennen kan. *Franckfurt am Mayn*, 1608. 73 p. illus. 20 cm.

ALBINUS, BERNHARD SIEGFRIED (1697-1770): Icones ossium foetus humani . . . *Leidae Batavorum, Joh. et Herm. Verbeek*, 1737. 164 p. engr. plates 24½ cm. 16 copper plates.

———: Explicatio tabularum anatomicarum Bartholomaei Eustachii. . . . *Leidae Batavorum, J. A. Langerak, et J. & H. Verbeek*, 1744. 277 p. engr. plates 42 cm.

ALBUCASIS (ALSAHARAVIUS) (912-1013): Liber theoricae necnon practicae . . . *Augsburg, S. Grim & M. Vuirsung*, 1519. 159 p. woodcut 30 cm. (The woodcut t. p. is by H. Burgkmair).

ALBUMASAR (ABU MASHAR JAFAR) (885 A. D.): . . . De magnis conjunctionibus: annorum revolutionibus: ac eorum profectionibus: octo continens tractatus. *Venetiis, Melchiorem Sessa. Per Jacobum pentium de Leucho*, 1515. p. — Woodcuts 21 cm.

ALDROVANDUS, ULYSSES (1522-1605): . . . Monstrorum historia cum paralipomenis historiae omnium animalium. *Bononiae, Nicolaus Tebaldinus*, 1642. 748 p. woodcuts 35 cm.

ALEXANDER TRALLIANUS (525-605 A. D.): . . . Libri duodecim. Joanne Guinterio Andernaco interprete et emendatore . . . *Lugduni, Antonius de Harfy*, 1576. 804 p. 12 cm.

ALEXIS PEDEMONTANUS: The secretes of the reverende Maister Alexis of Piedmount. Trans. out of French into Englishe, by William Warde. *London, Henry Bynneman for John Wight*, 1568. 4 pts. 18 cm.

ALGHISI, TOMMASO: Litotomia ovvero del cavar la pietra. *Firenze, G. Manni*, 1707. 120 p. plates 29 cm.

ALLEMANN, ALBERT: Napoleon and Medicine. *Medical Pickwick, Sept.* 1918. Pp. 337-338.

ALPINUS, PROSPER: . . . De medicina Aegyptiorum, libri quatuor. *Venetiis, Franciscus de Franciscis Senensis*, 1591. 150 p. 24 cm.

D'AMATO, CLINTIO: Prattica nuova, et utilissima di tutto quello. . . . *Venetia, Appresso Gio: Battista Brigna*, 1669. 88 p. woodcuts. 22 cm.

AMATUS LUSITANUS (1511-1568): . . . Curationum medicinalium centuria prima, multiplici variaque; rerum cognitione referta . . . *Florentiae, Laurentius Torrentinus*, 1551. 391 p. 17½ cm.

American Medical and Philosophical Register . . . *New York, C. S. Van Winkle*, 1813. 4 v.

The American Museum. Benjamin Rush, ed., *Philadelphia, Mathew Carey*.

American Medical Recorder, *July and October*, 1822, *Vol. V, No. III, Philadelphia.*

Analysis of the Rockbridge Alum Springs in Virginia. *Richmond, C. H. Wynne*, 1856.

Analysis and Description of Alum Waters from Rockbridge and Bath Springs in Virginia. 1854.

Analysis of Rockbridge Alum Springs of Virginia. 1875.

The Anatomical, medical and chymical papers published and dispers'd in the philosophical transactions and collections abridg'd and dispos'd under general heads, 1695-1700. (from transactions of the Royal Society of London) 370 p. 22 cm.

L'anatomie du corps humain avec ses maladies et les remèdes pour les guérir. *Nouvelle édition. Paris, Jean Couterot*, 1684. 581 p. engr. t. p. plates 19 cm.

Anatomy, epitomized and illustrated . . . *by M. N. B. A.* 182 p. plates 20 cm.

A compendious system of anatomy . . . extracted from the American edition of the encyclopedia. *Phila., Thos. Dobson*, 1792.

ANDERSON, L. B.: Brief biographies of Virginia physicians of olden times. *Richmond, Southern Clinic Printing*, 1889.

ANDERSON, WILLIAM (1820-37).: System of surgical anatomy. *New York, Jas. V. Seaman*, 1822. xxii, 199 p. 12 p. engr. plates 27½ cm.

ANDREW, JAMES: The Harveian oration delivered before the Royal College of Physicians October 18th, 1890. *London, Adlard & Son*, 1891.

Annals of Medicine, by Andrew Duncan, Sr. and Andrew Duncan, Jr. *Edinburgh, G. Mudie & Son*, 1796. 5 v. 21 cm.

ARANTIUS, JULIUS CAESAR (1530-1589): . . . De humano foetu libellus. *Lugduni Batav. F. L. de Haro*, 1664. 50 p. Bound with: 1. Plazzoni, Francesco: De partibus generationis . . . 2. Nymmanus, Gregorius: De vita foetus in utero.

———: . . . De humano foetu . . . libellus. A Laurentio Scholzio, Silesio, eius discipulo, in lucem editus. *Basileae, Petrie*, 1579. 99 p. 14 cm.

ARCAEUS, FRANCISCUS (1493-1573): De recta curandorum vulnerum ratione. *Antuerpiae, Christophorus Plantinus*, 1574. 285 p. 16½ cm.

ARDERNE, JOHN: De arte phisicali et de cirurgia. Tr. by Sir D'Arcy Power. *New York, Wm. Wood & Co.*, 1922,

ARETAEUS (1st or 2nd cent.): . . . Aetiologica, simeiotica et therapeutica morborum acutorum et diuturnorum . . . *Augustae Vindelicorum, Georgius Vvillerus*, 1603. 446 p. 31 cm.

ARISTOTLE (384-322 B. C.): . . . De animalium generatione libri quinque cum Philoponi commentariis. *Venice, Joan. Antonius et Fratres de Sabio*, 1526, 120 p. 29½ cm.

———: The Nicomachean ethics . . . Translated by R. W. Browne. *London, Bell & Daldy*, 1865.

———: . . . Operum Aristotelis stagiritae philosophorum omnium longe principis nova editio, Graece et Latine, *Guillelmus Laemarius*, 1597. 2 v. in 4. 19½ cm.

———: Secreta secretorum. *Lugd., Antonius Blachard*, 1528. 83 p. 13 cm.

———: The works of Aristotle, the famous philosopher. . . . A new and improved edition in four parts. *London, Archibald Whisleton, (n. d.)* 216 p. 16½ cm.

———: The works of Aristotle, the famous philosopher in four parts. New Ed. *New England, printed for the publishers*, 1831. 247 p. fronts. engr. 15 cm.

ARISTOTLE, GALEN and others: Ein hupsch beichlinn das durch die naturlichenn meister Aristotilem . . . Propleumata Aristotiles, *Strassburg, Martin Flach*, 1520. 19 cm.

ARISTOTLE (pseud.): Compleat masterpiece in three parts. 27th ed. *Printed and sold by the Booksellers*, 1766. To which is added a treasure of health or the family physician. 15 cm.

ARMSTRONG, GEORGE: An essay on the diseases most fatal to infants. *2nd ed. London, T. Cadell*, 1771. 188 p. 15½ cm.

ARMSTRONG, GEORGE D.: A history of the ravages of the yellow fever in Norfolk, Virginia, A. D. 1855. *Phila. J. B. Lippincott & Co.* 1856.

ARMSTRONG, JOHN (1709-1779): The art of preserving health: A poem. *1st ed. London, printed for A. Millar*, 1774. 99 p. 25½ cm.

ARNALD OF VILLA NOVA (1245-1310): . . . Praxis medicinalis. *Lugduni, Io. Stratius*, 1586. 33 cm.

ARUSIENS, Bishop of (BENEDICT KANUTI) (c. 1461): A litil boke the whiche traytied . . . necessaries for the . . . Pestilence . . . *London*, 1485. Reproduced in facsimile from the copy in the John Rylands Library. With an introduction by Guthrie Vine, M. A. *Manchester, University Press*, 1910.

ASELLI, GASPARO (1581-1626): De lactibus sive lacteis venis, quarto vasorum mesaraicorum genere . . . *Lugduni Batavorum, Johannes Maire*, 1640. 104 p. plates. 19 cm.

ASTRUC, JEAN (1684-1766): L'art d'accoucher réduit à ses principes . . . *Paris, Pierre Cavelier*, 1771. 312 p. 16½ cm.

———: De morbis venereis libri novem, in quibus disseritur tum de origine . . . *Lutetiae Parisiorum, Guillelmus Cavelier*, 1740. 2v. engr. fronts 25½ cm. (Author's presentation copy.)

———: Tractatus de morbis mulierum . . . *Venetiis, Nicolaus Pezzana*, 1763. xxiv, 388 p. plates 23 cm.

ATKINSON, WILLIAM B. ed.: The physicians and surgeons of the U. S. *Phila., Charles Robson*, 1878.

AUDRAN, GIRARD: Les proportions du corps humain, mesurées sur les plus belles figures de l'antiquité. *Paris, Girard Audran*, 1683. engr. plates 39 cm.

AUENBRUGGER, LEOPOLD (1722-1809): . . . Inventum novum. Faksimile nach der ersten Ausgabe . . . *Wien und Leipzig, Verlag von Josef Safar*, 1922. 24 cm.

———: Nouvelle méthode pour reconnaitre les maladies internes de la poitrine par la percussion de cette cavité. . . . *Paris, Migneret*, 1808. Ouvrage traduit du Latin et commenté par J. N. Corvisart. xxiii, 441 p. 20 cm.

AURAND, A. MONROE, JR.: The Pow-Wow Book. A treatise on the art of "Healing by Prayer." *Harrisburg, Pa., Aurand Press*, 1929.

AVENZOAR (d. 1162): Colliget Averrois. . . . Abhomeron Abinzoar libius theysir. . . . *Venice, Octavius Scotus*, 1530. 109 p. woodcut 30 cm. Bound with: Garbo, Thomas de: Summa medicinalis. . . . *Venice, Octavius Scotus*, 1531. 120 p.

AVERROES (1126-1198): Colliget Averrois. . . . Abhomeron Abinzoar libius theysir. . . . *Venice, Octavius Scotus*, 1530. 109 p. woodcut 30 cm. Bound with: Garbo, Thomas de: Summa medicinalis. . . . *Venice, Octavius Scotus*, 1531. 120 p.

AVICENNA (980-1037 A. D.): . . . Canon medicinae ex Gerardi Cremonensis versione et Andreae Alpagi Belunensis castigatione. . . . *Venetiis, Apud Iuntas*, 1608. 2v. engr. t. p. 34½ cm.

———: Liber canonis, de medicinis cordialibus et cantica. . . . *Venetiis, Apud Iuntas*, 1544. Cum castigationibus Andreae Alpagi Bellunensis. 593 p. 34½ cm.

BACON, FRANCIS, LORD VERULAM (1561-1626): Of the advancement and proficiencie of learning. Nine books, interpreted by Gilbert Wats. *London, Printed for Thomas Williams*, 1674. 322 p. fronts 30 cm.

———: Sylva sylvarum. *Published by W. Rawley. 6th ed. London, Printed for W. Lee*, 1651. 218 p. fronts (port.) engr. t. p. 28½ cm.

The Badianus Manuscript; An Aztec Herbal of 1552. Introduction, Translation and Annotations by Emily Walcott Emmart, with a foreword by Henry E. Sigerist. *Johns Hopkins Press, Baltimore*, 1940.

BAGBY, GEORGE W.: Selections from the Miscellaneous Writings of Dr. George W. Bagby. Vol. I. *Whittet & Shepperson*, 1884. *Richmond, Va.*

BAGELLARDUS, PAULUS (fl. 1441-1492): Opusculum recens natum de morbis puerorum. . . . *Lugduni, Germanus Rose*, 1538. 239 p. 16 cm. (3rd edition of the first work on pediatrics.)

BAGLIVI, GEORGIO (1668-1707): Opera omnia medico-practica, et anatomica. *Venetiis, J. Tomasinus*, 1716. 560 p. 24 cm.

BAKER, HENRY (1698-1766): The microscope made easy . . . *2nd ed. London*, 1743. xvi, 311 p. 20 cm. engr. plates. Printed for R. Dodsley.

BARBATUS, HIERONIMUS (17th cent.): . . . De formatrice, organizatione, conceptu, et nutritione foetus in utero. Dissertatio anatomica. *Patavii, Bodius*, 1676. 144 p. plates 22 cm.

BARBETTE, PAUL (1629-99): The chirurgical and anatomical works. . . . Trans. out of low-Dutch into English. *London, Printed for J. Darby*, 1672. 342 p. engr. fronts 16 cm.

BARD, SAMUEL (1742-1821): A compendium of the theory and practice of midwifery . . . *5th ed. New York, Collins & Co.*, 1819. 419 p. 21 cm.

BARKER, LEWELLYS F.: The Specialist and The General Practitioner. *Journal of the A. M. A.*, March 18, 1922, Vol. 78, No. 11, Pp. 773-779.

BARLES, LOUYS: Les nouvelles découvertes sur les organes des femmes servans à la génération. . . . *Lyon, Esprit Vitalis*, 1679. 214 p. plates 14 cm.

BARROUGH, PHILIP: The method of physick. . . . *Sixth ed. London, Richard Field*, 1624. 477 p. 18½ cm.

BARTHOLINUS, THOMAS (1616-80): Anatomia, ex Caspari Bartholini . . . institutionibus. . . . *Hagae-Comitis, Adrianus Vlacq*, 1663. 592 p. engr. fronts & plates. 19½ cm.

———: . . . De cometa, consilium medicum, cum monstrorum nuper in Dania natorum historia. *Hafniae, Matthias Godicchenius*, 1665. 154 p. 15 cm.

———: Epistolarum medicinalium. . . . Centuria I-IV, *Hagae Comitum, Petrus Gosse*, 1740. 512 p. 17 cm.

———: Thomae Bartholini antiquita-

tum veteris puerperii synopsis a filio Casparo Bartholino commentario illustrata. Cum Thomae Bartholini ad filium epistola. *Amstelodami, Henricus Wetstenius*, 1676. 179 p. plates 14 cm.

BARTHOLOMEI, SINONOMA: Anecdota Oxoniensia. Texts, documents and extracts chiefly from manuscripts in the Bodleian and other Oxford libraries. *Oxford, Clarendon Press*, 1882.

BARTHOLOMEUS ANGLICUS (fl. 1230-1250): Liber de proprietatibus rerum. In 19 bks. *Impr. Argent.* 1505. 29 cm.

BARTHOLOW, ROBERTS: The treatment of diseases by the hypodermic method. *3rd. ed. Phila. J. B. Lippincott & Co.* 1879.

BARTON, BENJAMIN SMITH (1766-1815): A memoir concerning the fascinating faculty which has been ascribed to the rattle-snake, and other American serpents. *Phila., Henry Sweitzer*, 1796. 70 p. 22½ cm.

BARTON, WILLIAM PAUL CRILLON (1786-1856): Vegetable materia medica of the United States, or Medical Botany. . . . *Phila., M. Carey & Son*, 1817. 2 v. col. engr. 26½ cm.

BASTELLUS, ANDREAS (16th cent.): Speculum medicinae. . . . *Madriti, Varez à Castro*, 1599. 209 p. 20 cm. only one other copy known—in British Museum—Bound by Riviere.)

BATEMAN, THOMAS (1778-1821): Delineations of cutaneous diseases. *London, Longman etc.*, 1817. plates.

———: A practical synopsis of cutaneous diseases according to the arrangement of Dr. Willan. *2nd ed. London, printed for Longman, etc.* 1813. xxiv, 342 p. engr. fronts. 20½ cm.

BAUDELOCQUE, JEAN-LOUIS (1746-1810): L'art des accouchemens. . . . *Paris, Mequignon*, 1781. 2 v. plates 19½ cm.

———: A system of midwifery. Translated from the French by John Heath. . . . London. *Printed for the author and sold by J. Parkinson*, 1790. 3 v. plates, 22 cm.

———: Two memoirs on the Caesarean Operation. Translated from the French by John Hull, M. D. *Printed by Sowler and Russell, Manchester*, 1801. 6 engr. (This is Dr. Jessie Bennett's personal copy.)

BAUHIN, CASPAR (1560-1624): . . . De hermaphroditorum monstrosorumque partuum natura. . . . *Oppenheimii, Hieronymus Gallerus*, 1614. 594 p. fronts. plates 16½ cm.

BAUMANN, E. D.: De dokter en de geneeskunde. De Wetenschap. *Amsterdam, H. Meulenhoff*, 1915.

BAUMBERGER, GEORG: The Founding of the Red Cross Society, *Chautauquan, Feb.* 1896. Pp. 602-605.

BAYLE, FRANÇOIS: Histoire anatomique. . . . *Toulouse, G. L. Colomyez*, 1693. 119 p. 14 cm.

BAYNARD, EDWARD (1641) and FLOYER, JOHN (1649-1734): Psychrolusia: or the History of cold-bathing, both ancient and modern, in two parts. The first written by Sir John Floyer . . . the second . . . by Dr. Edward Baynard. *6th ed. London, W. Innys, etc.* 1732. 491 p. 19½ cm.

BEATTIE, JAMES: An essay on the nature and immutability of truth in opposition to sophistry and scepticism. . . . *2nd ed. Edinburgh. A. Kincaid, & J. Bell, etc.* 1771. 21 cm. (Benjamin Rush's copy with his signature and date, 1779 on fly-leaf.)

BEAUMONT, WILLIAM (1785-1853): The physiology of digestion, with experiments on the gastric juice. . . . 2nd ed. Corrected by Samuel Beaumont, M. D. *Burlington, Chauncey Goodrich*, 1847. 303 p. 19½ cm.

BECK, L. ADAMS: The Renewal of

Youth and After. *Forum, Sept.* 1924. Pp. 373-381.

The Bedford Alum and Iron Springs.

BEGER, LAURENTIUS: Spicilegium antiquitatis. . . . *Brandenburgicae, Ulricus Liebpertus*, 1692. 167 p. engr. plates 34 cm.

BELL, CHARLES (1774-1842): Engravings of the arteries. *3rd ed. London, Printed for Longman, Hurst etc.* 1811. viii, 55 p. engr. plates 24½ cm.

BELL, JOHN (1763-1820): The principles of surgery abridged by J. Augustine Smith, . . . 2nd ed. with notes and additions. *New York, Collins & Co.*, 1812. 562 p. 20½ cm.

BELL, JOHN (1763-1820) and CHARLES (1774-1842): The anatomy and physiology of the human body. 3rd American edition from the 4th English ed. 3 v. *New York, Collins & Co.*, 1817.

BELL, JOHN (1796-1872): A treatise on baths . . . also, on the watery regimen, hydropathy, and pulmonary inhalation, with a description of bathing in ancient and modern times. *Phila., Barrington and Haswell*, 1850. 658 p. 20 cm.

BELLINI, LAURENTIUS (1643-1704): . . . Exercitatio anatomica de structura et usu renum. Cui renum monstrosorum exempla . . . addidit Erardus Blasius. *Amstelodami, Andreas Fresius*, 1665. 132 p. engr. plates 13 cm.

BERKELEY, ROBERT: An Inquiry into the Modus Operandi of that Class of Medicine Called Sedatives. *University of Pennsylvania Thesis. Philadelphia, Way & Groff*, 1800.

BEVEROVICIUS (VAN BEVERWYCK) JOHANN (1594-1647): . . . Wercken der genees-konste, bestaende in den schat der gesontheyt, schat der ongesontheyt heel-konste. Ed. Heer Jacob Cats, Ridder, etc. *Amsterdam, Weduwe van J. J. Schipper*, 1672. 252 p. engr. t. p. & plates 23 cm.

BIANCHI, GIOVANNI BATTISTA (1681-1761): . . . De naturali in humano corpore, vitiosa morbosaque generatione historia. . . . *Augustae Taurinorum, Joannes Baptista Chais*, 1741. 447 p. 20 cm.

BIBLE: Biblia: das ist, alle bucher alts und newes testaments. . . . *Zurych, Johans Wolffen*, 1597. Woodcuts 36½ cm.

———: The new testament of our Lord and Saviour Jesus Christ, translated out of the original Greek. . . . *Phila. E. T. Scott*, 1826.

BIGELOW, HENRY JACOB: 1. The mechanism of dislocations and fracture of the hip. 2. Litholapaxy or rapid lithotrity with evacuation. *Boston, Little, Brown & Co.*, 1900.

———: A memoir. *Boston, Little, Brown & Co.*, 1900.

———: Orthopedic surgery and other medical papers. *Boston, Little, Brown & Co.*, 1900.

———: Surgical anaesthesia. Addresses and other papers. *Boston, Little, Brown & Co.*, 1900.

BIGELOW, JACOB (1787-1879): Nature in disease, illustrated in various discourses and essays. . . . *Boston, Ticknor & Fields*, 1854. viii, 391 p. 18 cm. (This copy belonged to S. E. Chaillé of New Orleans and has his name and date, 1854 on fly-leaf.)

BLACKMORE, RICHARD (c. 1650-1729): Prince Arthur. An heroick poem in ten books. . . . *3rd ed. London, Printed for A. & J. Churchil*, 1696. 343 p. 30½ cm.

BLANCARD, STEPHEN (1650-1702): . . . Anatomia reformata, sive concinna corporis humani dissectio, accedit eiusdem authoris de Balsamatione, Nova Methodus. . . . *Lugduni Batavorum, Jordanus Luchtmans, et*

Cornelius Boutestein, 1695. 759 p. engr. tp. & tables. 21 cm.

BLANE, SIR GILBERT: (Sham book — containing a pack of early English playing cards owned by Dr. Blane).

BLASIUS, GERARDUS (1626-82): Fortunius licetus de monstris. . . . Editio novissima. . . . *Amstelodami, Andrea Frisius*, 1665. 316 p. fronts. illus.

BLIZARD, SIR WILLIAM (1743-1835): The Hunterian oration. *London, S. Highley, etc.* 1828. 41 p. port. 28½ cm.

BLONDEL, JAMES AUGUSTUS: Dissertation physique sur la force de l'imagination des femmes enceintes sur le fetus. . . . Traduit de l'Anglais par Albert Brun. . . . *Leyde, G. Langerak & Theodore Lucht*, 1737.

———: The power of the mother's imagination over the foetus . . . 143 p. 19 cm.

BLUNT, JOHN: Man-midwifery dissected; or, The obstetric family-instructor. For the use of married couples and single adults of both sexes. . . . *London, S. W. Fores, (n. d.)*, 236 p. 17½ cm.

BOCK, HIERONYMUS (1498-1554): De stirpium . . . libri tres . . . interprete Davide Kybero. *Argentorati, Vuendelinus Rihelius*, 1552. 1200 p. col. plates 23½ cm.

BODENHAMER, WILLIAM: A practical treatise on the aetiology, pathology, and treatment of the congenital malformations of the rectum and anus. *New York, Samuel and William Wood*, 1860. 368 p. fronts. plates 22½ cm.

BOECKELMAN, ANDRIES and DORTMONT, BONAVONTURA VAN, and others: (Roonhuysiaansch geheim) . . . *Amsterdam, J. Riewwertsz*, 1667. 15½ cm. (A collection of 42 Dutch pamphlets on the "secret of Roonhuysen" or the obstetrical forceps.)

BOEHMER, PHILIPPUS ADOLPHUS (1717-1789): Observationum anatomicarum rariorum fasciculus notabilia circa uterum humanum continens cum figuris ad vivum expressis. . . . *Halae Magdeburgicae, Joannes Justinus Gebauerus*, 1752. lxvii, engr. plates, 44½ cm.

BOERHAAVE, HERMANN (1668-1738): Academical lectures on the theory of physic, being a genuine translation of his institutes and explanatory comment. *London, Printed for W. Innys*, 1742. 2 v. 20 cm.

———: Physiologike, seu oeconomia animalis. . . . *Londini, Johannes Noon*, 1741. xi, 164 p. engr. plates 25½ cm.

———: Tractatio medico-practica de lue venerea. . . . *Lugduni Batavorum, H. Vander Deyster* etc. 1751. 302 p. 20 cm.

———: A treatise on the powers of medicines, translated from the most correct Latin edition by John Martyn. *London, Printed for John Wilcox*, 1740, xix, 382 p. 20 cm.

BOIVIN, MARIE-ANNE-VICTOIRE-GILLAIN (1773-1847): Memorial de l'art des accouchemens . . . *4th ed. Paris, J. B. Baillière, etc.* 1836. 526 p. tables 20½ cm.

BOLTON, HENRY CARRINGTON: Evolution of the thermometer, 1592-1743. *Easton, Pa., Chemical Publ. Co.*, 1900.

BONACIOLUS, LUDOVICUS (d. 1540): . . . De conformatione foetus, accedunt alia. . . . *Amstelodami, H. et T. Boom*, 1669.

BONAVENTURA (SAINT) (JOHN OF FIDANZA) 1221-1274: Quaestiones. *Nuremberg, Anton Koberger*, 1499. Illuminated initials 31 cm. Pt. 1, 144 p. Pt. 2, 192 p. (incunabula).

BONET, THEOPHILE (1620-1689): . . . Sepulchretum sive anatomia practica ex cadaveribus morbo denatis . . . editio altera, quam novis commentariis. . . . Johannes Jacobus Mangetus. *Genevae, Cramer & Perachon*, 1700. 3v. in 2. engr. front. & t. p. 36 cm.

BONTIUS, JACOB (1598-1631): . . . De medicina Indorvm, Lib. IV. *Lugduni Batavorum, Franciscus Hackius*, 1642. 212 p. engr. t. p. 12½ cm.

BOOGERS, LUKAS JOH.: Bemerkungen über die von Herrn Bernhard Guerard. . . Gepflogenen . . . Entbindungsart . . . die Schambeintrennung betreffend. *Wien, Rudolph Graffer*, 1780. 71 p. 17½ cm.

BOORDE, ANDREW (1490-1549): The breviary of healthe. . . . *London, William Powell*, 1557. *3rd ed.*

DE BORDEU, THÉOPHILE: Recherches sur le tissue muqueux, ou l'organe cellulaire, et sur quelques maladies de la poitrine. . . . Nouvelle édition. . . . *Paris, J. Fr. Bastien*, 1791. 221 p. 15½ cm.

BOSTOCK, J.: The History of Medicine to the 19th Century. *New York, Harper & Brothers*, 1936.

BOTTONI, ALBERT: De morbis muliebribus. Liber secundus. *Venetiis, Paulus Meietus*, 1588. 101 p. 23 cm.

BOTANY: A critical dissertation on the mandrake of the antients; with some observations on the Egyptian, Grecian and Roman literature, botany and medicine. . . . *London, T. Gardner*, 1737.

BOUDON, BENEDICTUS: Anatomie chirurgicale ou Description exacte des parties du corps humain, par M. J. Palfin. *Paris, G. Cavelier*, 1734. 2 v.

BOURGEOIS DITE BOURSIER, LOUYSE (1563-1636): Ein gantz neu Hebammen Buch. . . . *Oppenheim, H. Gallern, etc.* 1619. p. plates 18 cm.

———: Observations diverses sur la sterilité . . . des femmes et enfants. *Paris, Henry Ruffin*, 1642. fronts. 16 cm.

———: Verscheyde aenmerckinge nopende de. . . . *Delf, Aernold Bon*, 1658. 88 p. 15 cm.

BOUSSUET, FRANCIS: De natura aquatilium carmen, in universam Gulielmi Rondeletii . . . quam de piscibus marinis scripsit historiam. . . . *Lugduni, Matthias Bonhome*, 1558. 135 p. woodcuts 19½ cm.

BOYLE, ROBERT (1627-1691): The philosophical works. 2nd edition. *London, Printed for W. Innys, etc.* 1738. engr. fronts. 24 cm. (illustrated with notes by Peter Shaw).

BRABANT, THOMAS VON: Die Gynäkologie. . . . *München, Carl Kuhn*, 1912 (facsimile of illuminated mss. completed in 1240 A. D.)

BRADLEY, RICHARD: A philosophical account of the works of nature, mineral, vegetable and animal parts of the creation. *London, Printed for W. Mears*, 1721. 195 p. engr. 27½ cm. (to which is added an account of the state of gardening as it is now in Great Britain and other parts of Europe).

BRAMBILLA, JOH. ALEXANDER: Storia delle scoperte fisico-medico-anatomico-chirurgiche. . . . *Milano, A. Maggiore* 1780. 3 v. fronts. engr. t. p. 26½ cm.

BREITHAUPT, JOHANN CHRISTIAN: Anweisung zum mechanischen Gebrauche der steinischen Brustpumpe besonders des darzu gehörigen Nebenapparats. Mit einem Kupfer. *Cassel, Henrich Schmiedt*, 1774. 20 cm. (Bound with a collection of obstetrical pamphlets by Georg Wilhelm Stein.)

BRISBANE, JOHN: The anatomy of painting, or a short and easy intro-

duction to anatomy. *London, Geo. Scott*, 1769. 76 p. engr. plates 38 cm.

BRISSEAU, PIERRE (1631-1717): Traité de la cataracte et du glaucoma. *Paris, Laurent d'Houry*, 1709. 260 p. engr. plates 16 cm.

BROOKES, R.: The general practice of physic extracted chiefly from the writing of the most celebrated practical physicians, *6th ed. London, T. Carnan and F. Newbery*, 1771. . . . In 2 vol. 20½ cm.

———: A history of the most remarkable pestilential distempers that have appeared in Europe for three hundred years. *London, printed for A. Corbett*, 1721. 47 p. 17½ cm.

BROWN, HORACE MANCHESTER: Medicine in the Revolt of the Sixteenth Century. *The Military Surgeon*, Jan. 1923, Pp. 65-82.

BROWNE, EDWARD (1644-1708): An account of several travels through a great part of Germany. *London, Printed for Benj. Tooke*, 1677. 179 p. 19 cm.

BROWNE, JOHN (1642-1700): Myographia nova: or, a graphical description of all the muscles in the humane body. *London, Tho. Milbourn*, 1698. viii, 186 p. engr. plates 31 cm.

BROWNE, JOSEPH: A practical treatise of the plague. *London, J. Wilcox*, 1720. 79 p. 19 cm.

BROWNE, SIR THOMAS (1605-82): Pseudodoxia epidemica. *5th ed. London, Edward Dod*, 1669. 414 p. 20½ cm. engr. plates.

———: Religio Medici. Fifth ed. Observations by Sir Kenelm Digby. *London, Thos. Milbourn for Andrew Crook*, 1659. 297 p. engr. fronts. 14½ cm. (with annotations never before published, upon all the obscure passages therein).

———: Religio Medici and Digby's observations. *Oxford, Clarendon Press*, 1909.

BROWNLOW, JOHN: Memoranda; or Chronicles of the Foundling Hospital. *London, Sampson Low*, 1847.

BRUNSCHWIG, HIERONYMUS (fl. 1500): The book of Cirurgia, Strassburg, Johann Grüninger, 1497, with a study by Henry E. Sigerist. *Milano, R. Lier & Co.* 1923. 272 p. xvi 28½ cm. woodcuts.

———: Hauszapotheck zu yeden leibs gebresten fuer den gemainen mann und das arme Landuolck. *Franckfurt, Christian Egenolff*, 1537. 123 p. woodcuts 17 cm.

BRYANT, THOMAS: The Hunterian oration. Delivered . . . at the Royal College of Surgery of England on the Centenary of Hunter's death. Feb. 14, 1893. *London, Adlard & Son*, 1893.

BRYCE, C. A.: Ups and downs of a Virginia doctor. *Ashland, Ashland Printing Co.* 1904.

Buffalo Lithia Springs, Mecklenburg County, Virginia. *Philadelphia, McCalla & Stavely*, 1883.

BULLEIN, WILLIAM (1500-76): Bulleins bulwarke of defence against all sicknesses, soarnesses and woundes that doe dayly assualte mankinde: *London, Thomas Marshe*, 1579. 27 cm. (very rare)

BURNS, JOHN (1774-1850): Obstetrical works. *New York, Collins & Perkins*, 1809. 3 v. in 1. 256 p. 16 plates 21cm.

BURTON, JOHN (1710-1771): A letter to William Smellie, M. D., containing critical and practical remarks upon his treatise on the theory and practice of midwifery. *London, W. Owen*, 1753. 248 p. 20 cm.

BUSEY, SAMUEL C.: Personal reminiscences and recollections of forty-six years' membership in the Medical Society of the District of Columbia. *Washington, D. C.*, 1895.

BUSHE, GEORGE: Plates illustrating a treatise on the malformations, injuries and diseases of the rectum and anus. *New York, French & Adlard*, 1837. plates 28 cm.

BUSSCHOF, HERMAN: Two treatises, the one medical of the gout by Herman Busschof. The other, partly chirurgical, partly medical by Henry van Roonhuyse, *London, H. C.*, 1676.

BUTTERWORTH, HEZEKIAH: The Black Death in New England. *Popular Science*, May, 1873. Pp. 28-32.

CADOGAN, WILLIAM (1711-97): A dissertation on the gout, and all chronic diseases, jointly considered. *Dublin, Jos. Sheppard*, 1771, 102 p. 16 cm.

———: An essay upon nursing and management of children. *9th ed. London, Robert Horsfield*, 1769. 45 p. 20½ cm.

CAIUS, JOHN (1510-73): De medendi methodo libri duo, ex C. Galeni, Pergameni, & Io. Baptistae Montani Veronensis, principum medicorum, sententia. Opus utile, & iam primum natum. *Basileae, Hieronymus Frobenius & Nicolaus Episcopius*, 1544. 107 p. 16½ cm.

CAMERON, SIR CHARLES A.: History of the Royal College of Surgeons in Ireland and of the Irish schools of medicine. *Dublin, Fannin & Co.*, 1916.

CAMPER, PETER (1722-89): The works of the late Prof. Camper . . . trans. from the Dutch by T. Cogan, M. D. *London, C. Dilly*, 1794. 175 p. fronts. plates 30 cm.

——— and DAMEN, J. C.: Verhaal van den gelukkigen vitslag, der doorsnedi van de schaambeenderen, 1785. 11 p.

CAPPARONI, PIETRO: Magistri Salernitani nondum cogniti. *London, John Bale, Sons, & Danielsson*, 1923.

Les caquets de l'accouchée, *Paris, C. Marpon et E. Flammarion, n. d.* [*after* 1847]. xlv, 290 p. 16½ cm.

CARBON, DAMIAN (DAMIA CARBO Y MALFERIT) (d. 1554): Libro del arte de las comadres, o madrinas, y del regimiento delas prenadas y paridas, y delos ninos. . . . *Mallorca, Hernando de Cansoles*, 1541. 120 p. woodcuts 20½ cm. (First Spanish work on obstetrics. Only two other copies known.)

CARDANUS, HIERONYMUS (1501-76): De subtilitate, libri xxi. . . . *Lugduni, Gulielmus Rouillius*, 1550. 621 p. 17½ cm.

CAREY, MATHEW: A short account of the malignant fever lately prevalent in Philadelphia, *4th ed. Phila., Author*, 1794. 164 p. 21 cm.

CARLISLE, ANTHONY: An essay on the disorders of old age, and on the means for prolonging human life. *2nd ed. London, Printed for Longman etc.* 1818. iv, 110 p. 22½ cm.

CARRADORI, FRANCESCO: Istruzione elementare per gli studiosi della sculptura. . . . *Firenze*, 1802. 17 copper plates. 28 cm.

CASSERIUS, JULIUS (PLACENTIUS) (1561-1616) and BUCRETIUS, DANIEL (1600-31): Anatomische tafeln. . . . *Franckfurt, George Heinrich Oehrling*, 1707. engr. plates 20½ cm.

CASTELLUS, BARTHOLOMAEUS (d. 1607): Lexicon medicum Graeco-Latinum, primum tribus editionibus a Jacobo Pancratio Brunone locupletatum. . . . *Patavii, Joannes, Manfrè*, 1762. 2 v. 22½ cm.

CASTILLIONEUS, JOANNES HONORATUS: Prospectus pharmaceuticus. . . . *Mediolani, Joannes Baptista Ferrarius*, 1668. 439 p. 32 cm.

CATHELL, D.: Book on the physician himself, and things that concern his reputation and success. *Phila., F. A. Davis Co.* 1911.

CAUSTIC, CHRISTOPHER: Terrible tractoration. A poetical petition against

galvanising trumpery. *New York, Samuel Stansbury*, 1804.

CELSUS, AURELIUS CORNELIUS (53 B. C.-7 A. D.): The eight books on medicine, with a literal and interlineal translation on the principles of the Hamiltonian system adapted for students in medicine, by J. W. Underwood. *London, Compton & Ritchie*, 1830. 2 v. 17 cm.

———: De medicina. . . . *Amstelaedami, Joannes Wolters*, 1687. 374 p. engr. t. p. & plates. 14½ cm.

———: Medicine libri octo noviter emendati et impressi. *Lugduni, Simon*, 1516. 106 p. 19½ cm.

———: De re medica, libri octo. *Parisiis, C. Vuechel*, 1529. 27½ cm.

———: De re medica, libri VIII. *Lugduni, Joan. Tornaesius and Gulielmus Gazeius*, 1554. 581 p. 11½ cm.

———: De re medica, libri octo, ex fide manuscriptorum codicum . . . recensuit J. Valart. *Parisiis, P. Fr. Didot*, 1772. 553 p. 15½ cm.

CHACON, DIONISIO DACA (1510-96): Practica, y teorica de cirugia en Romance, y en Latin. . . . *Madrid, Lucas Antonio de Bedmar y Valdivia*, 1678. 2 v. in 1. 29 cm.

CHAPIN, CHARLES V.: The Evolution of Preventive Medicine. *Journal of A. M. A.*, Vol. 76, No. 4, Pp. 215-222.

CHAPMAN, EDMUND: A treatise on the improvement of midwifery, chiefly with regard to the operation. *2nd ed. London, Printed for John Brindley*, 1735. 186 p. 19½ cm.

CHARAS, MOYSE (1618-98): New experiments upon vipers. *London, Mark Pardoe*, 1677. 112 p. engr. t. p. & plates. 17 cm.

———: Pharmacopée royale galénique et chymique Nouvelle édition. *Lyon, Anisson & Posuel*, 1704. 884 p. engr. t. p. & plates 23 cm.

CHARLETON, WALTER (1619-1707): De causis catameniorum — sive fluxus menstrui; nec non uteri rheumatismo. *Lugduni Batavorum, Petrus vander Aa*, 1686. 204 p. fronts. 13 cm.

———: Exercitationes physico-anatomicae de oeconomia animali. . . . *Lugd. Batav., Aloysius Pavinus*, 1693. 298 p. 14 cm. Also: Dissertatio, epistola de ortu animae humanae ut et consilium hygiasticum. 32 p.

DE CHAULIAC, GUY (1300-68): Chyrurgia Guidonis de Cauliaco. *Vincentius de Portonariis*, 1499. 133 fol. 20½ cm. Hain-Copinger 1546.

———: Le grande chirurgie . . . Restituée par M. Laurens Joubert. . . . *Tournon, Claude Michel*, 1619. 2 v. in 1. woodcuts 16 cm.

———: La grande chirurgie, *Paris, Germer Bailliere et Cie. Felix Alcan, Ed.*, 1890. cxci, 745 p. fronts. 27 cm.

DE CHAVIGNY BEAUNOIS: Commentaires . . . sur les centuries et prognostications de feu M. Michel de Nostradamus. *Paris, Gilles Robinot*, 1596. 80 p. 16½ cm.

CHEMISTRY: The anatomical, medical and chymical papers publish'd and dispers'd in the Philosophical transactions of the Royal Society (1695-1700).

CHERUBIN D'ORLÉANS: La dioptrique oculaire, ou la théorique, la positive et la méchanique de l'oculaire dioptrique en toutes ses espèces. *Paris, Thos. Jolly*, etc. 1671. 419 p. engr. tables 35½ cm.

CHESELDEN, WILLIAM (1688-1752): Anatomical tables of the human body. *Boston, Manning & Loring*, 1796. 46 p. engr. plates. 21 cm.

———: The anatomy of the human body. *5th ed. London, Wm. Bowyer*, 1740. 40 copper plates. 336 p. engr. fronts. & plates. 22½ cm. (a life of

Cheselden, from Biog. Brit. Oct. 1784 pasted on fly-leaf. 4 p.)

CHEYNE, GEORGE (1671-1743): The English malady, . . . in 3 parts. *6th ed. London, Printed for G. Strahan*, 1735. xxxii, 370 p. 19½ cm.

———: An essay of health and long life. *7th ed. London, Printed for George Strahan*, 1725. xx, 232 p. 19 cm.

———: An essay of the true nature and due method of treating the gout. *5th ed. London, Printed for G. Strahan*, 1723. iv, 133 p. 19½ cm.

CHEYNE, JOHN (1777-1836): The pathology of the membrane of the larynx and bronchia. *Edinburgh, Mundell, etc.* 1809. 204 p. engr. fronts. & plates 22 cm.

CHIRURGIE, 1768: (37 plates, drawn by Goussier, engraved by Prevost and Defehrt, for Diderot's Encyclopedie.)

CHISHOLM, A. STUART: Theory and Practice of Medicine During the 17th Century. *Journal of the A. M. A.*, Vol. LX, No. 10, Pp. 709-948.

CHURCHILL, FLEETWOOD, ed.: Essays on the puerperal fever and other diseases peculiar to women. Selected from the writings of British authors previous to the close of the 18th century. *Phila., Lea & Blanchard*, 1850. 464 p. 23½ cm.

CLAIBORNE, JOHN: An Inaugural Essay on Scurvy. University of Pennsylvania. *Philadelphia, Stephen C. Ustick*, 1798.

CLARKE, JOHN: Practical essays on the management of pregnancy and labour; and on the inflammatory and febrile diseases of lying-in women. *London, Printed for J. Johnson*, 1793. 170 p. 22½ cm.

CLAYTON, REV. JOHN: A Letter from Mr. John Clayton, Rector of Crofton at Wakefield in Yorkshire, to the Royal Society, May 12, 1688. (Reprint. In Force, Peter. *Tracts . . . Washington* 1836-46. Vol. III, No. 12, 45 p.)

———: Flora Virginica exhibens plantas, quas nobilissimus Vir. D. D. Johannes Claytonus . . . observavit. . . . *Lugduni Batavorum*, 1762.

CLEARWATER, A. T.: Medical Expert Testimony. *North American Review.* June, 1909. Pp. 821-830.

CLUSIUS, CAROLUS (1526-1609): Rariorum plantarum historia. . . . *Antuerpiae, Joannes Moretus*, 1601. 348 p. engr. t. p. & portrait, woodcuts 33½ cm. 1st ed.

COBER, TOBIAS (d. 1625): De lacte et pultibus, quibus infantes passim sustentantur tractatus. . . . *Gorlicii, A. Fritsch*, 1593. 15½ cm. (1st ed.)

COGHAN, THOMAS (1545-1607): The haven of health. *London, Anne Griffin*, 1636. 321 p. 18 cm.

COLBATCH, JOHN: Four treatises of physick and chirurgery . . . 2nd ed. . . . *London, Printed by J. D. for D. Brown*, 1698. xxiv, 85 p. 17 cm. Contains also: 1. A treatise of the gout . . . 1697. 143 p. 11. The doctrine of acids in the cure of diseases. . . . 1698. 128 p.

COLES, ABRAHAM: The microcosm. A poem. *New York, D. Appleton & Co.* 1866.

College of Physicians, London: A critical dissertation on the mandrake of the antients; with some observations on the Egyptian, Grecian, and Roman literature, botany, and medicine. *London, T. Gardner*, 1737. 58 p. 21½ cm.

———: A letter from a physician in town to his friend in the country. . . . *London, A. Millar*, 1753.

COLLEY, RICHARD: An account of the foundation of the Royal hospital of King Charles II, etc. near Dublin, 1680, 1686. . . . *Dublin, Printed for Robert Owen*, 1725. 64 p. 16 cm.

COLTON, GARDNER QUINCY: Sketches of Men of Mark. *New York*, 1871.

COLUMBUS, MATTHAEUS REALDUS (1494-1559): De re anatomica libri XV. *Parisiis, Andreas Wechelus*, 1572. 495 p. 17½ cm.

CONSTANTINUS AFRICANUS (1020-1087 A. D.): Viaticum. *Lugduni, Gilbertus de Villiers*, 1510. Bound with: RHAZES: Opera parva . . . liber ad Almansorem . . . *Lugduni, Gilbertus de Villiers*, 1511, and Liber divisionum . . . *Lugduni, Gilbertus de Villiers*, 1510.

COOK, A. H.: The Winchester Medical College, Winchester, Va. *Medical Pickwick*, Jan. 1918. Pp. 3-7.

COOKE, JAMES: Mellificium chirurgiae; or, the marrow of chirurgery. An anatomical treatise. *4th edition. London, T. Hodgkin*, 1685. 616 p. engr. plates 19½ cm.

COOKE, JOHN ESTEN: Essays on the Autumnal and Winter Epidemics. *Transylvania Press, J. G. Norwood*, 1829.

COOPER, SIR ASTLEY (1768-1841): Observations on the structure and diseases of the testis . . . *2nd ed. Edited by Bransby B. Cooper, London, John Churchill*, 1841. 300 p. plates 32½ cm.

CORNARIUS, JANUS (1500-58): Opera, libri XVI, in tres tomos divisi. . . . *Basileae, In officina Froben*, 1535. 31½ cm.

COSTA, JOANNE: Mesuae medici clarissimi opera. . . . *Venetiis, Apud Iuntas*, 1568.

CORVISART, JEAN NICOLAS (1755-1821): Essai sur les maladies et les lésions organiques du coeur et des gros vaisseaux, *Paris, Migneret*, 1806. lvi, 484 p. 19½ cm.

DU COUDRAY, ANGÉLIQUE-MARGUERITE-LE-BOURSIER: Abbrégé de l'art des accouchemens . . . nouvelle édition. *Paris, Pierre Toussaints*, 1769. 189 p. fronts. plates 19½ cm.

COUES, WILLIAM PIERCE: The Life and Military Campaigns of Baron Larrey. *Boston Medical Journal*, Vol. CLXXXII, No. 6, pp. 146-153.

COUPER, ROBERT: Speculations on the mode and appearances of impregnation in the human female . . . *2nd ed. Edinburgh, Printed for Peter Hill, etc.* 1797. 194 p. 22½ cm.

DE COURCELLES, DAVID CORNELIUS: Icones musculorum plantae pedis eorumque descriptio. *Lugduni Batavorum, Conradus Wishoff, et Georg. Jac. Wishoff, Fil. Conrad.* 1739. 7 copper plates. (Bound with B. S. Albinus: Icones Ossium Foetus humani—*Leidae Batavorum, Joh. et Herm. Verbeek*, 1737.)

COWDRY, E. V.: The Office of Imperial Physicians Peking. *A. M. A. Journal*, July 23, 1921, Vol. 77, No. 4, Pp. 307-310.

CRABTRE, A. D.: The funny side of physic: or, the mysteries of medicine. . . . *Hartford, J. B. Burr & Hyde*, 1872.

CRANTZ, HEINRICH NEPOM. (1722-1786): Commentarius de rupto in partus doloribus a foetu utero. *Neapoli, Expensis Felicis Hippolyti*, 1776. 76 p.

CRESWELL, CLARENDON HYDE: The Royal College of Surgeons of Edinburgh. Historical notes from 1505 to 1905. *Edinburgh, Oliver and Boyd*, 1926.

CROOKE, HELKIAH (1576-1635): Mikrokosmographia. *London, William Laggard*, 1615. 1011 p. woodcuts 33 cm.

A CRUCE, JOANNES ANDREAS (16th cent.): Chirurgiae universalis opus absolutum, addita in super est officina chirurgica. . . . *Venetiis, Robertus Meiettus*, 1596. 35½ cm.

CULLEN, THOMAS S.: Early medicine in Maryland.

CULLEN, WILLIAM (1710-1790): First lines of the practice of physic. . . . *New York, L. Nichols*, 1805. 2 v.

———: Lectures on the materia medica. . . . *Phila., Robert Bell*, 1775. V, 512 p. 24½ cm.

———: A letter to Lord Cathcart . . . concerning the recovery of persons drowned and seemingly dead. *Edinburgh, Printed for C. Elliot*, 1784. 40 p. 21½ cm. (to which is added an extract from the Journal of the Board of Police, containing a paper presented by Lord Cathcart on the same subject.) This copy belonged to Dr. Robert Walker of Petersburg.

CULPEPER, NICHOLAS (1616-54): A directory for midwives. *London, C. Hitch, etc.*, 1762.

———: The English physitian, enlarged. *London, John Streater*, 1671. 285 p. 17 cm.

———: . . . English Physician. *London, printed for the author and sold by Champante & Whitrow*, 1798. 2 v. in 1. fronts. plates 26 cm.

———: . . . Last legacy . . . *Printed for N. Brooke*, 1655. 73 p. engr. fronts. 16½ cm.

———: A physical directory; or, a translation of the dispensatory made by the Colledge of physitians of London. *London, Peter Cole*, 1650. 242 p. 25½ cm.

———: Pharmacopoeia Londinensis; or, the London dispensatory. *London, printed for George Sawbridge*, 1675. 305 p. 16½ cm.

———: Semeiotica uranica. *London, Nath. Brookes*, 1651. 190 p. fronts (port.) 14 cm.

CURRIE, JAMES (1756-1805): Medical reports on the effects of water, cold and warm as a remedy in fever and other diseases. From the 4th London edition, corrected & enlarged. *Phila. James Humphreys*, etc. 1808. 2 v. in 1. 21 cm.

CURTIS, JOHN G.: Harvey's views on the use of the circulation of the blood. *New York, Columbia University Press*, 1915.

CUSHING, HARVEY: The Physician and the Surgeon. *Surgery, Gynecology and Obstetrics. Volume XXXV, No. 6*, Dec. 1922, Pp. 701-710.

DA COSTA, J. M.: Harvey and his discovery. *Phila., J. B. Lippincott & Co.*, 1879.

DAMEN, J. C. and CAMPER, PETRUS (1722-89): Verhaal van den gelukkigen uitslag, der doorsnedi van de schaambeenderen, 1785. 11 p. 20 cm.

DANCER, THOMAS: The medical assistant. *2nd ed. St. Jago de la Vega, John Lunan*, 1809. XII, 434 p. 26 cm.

DARWIN, ERASMUS (1731-1802): The botanic garden, a poem. In two parts. *4th ed. London, J. Johnson*, 1799. 2 v. engr. fronts. and plates. 21 cm.

DA SILVA ROSA, J. S.: Geschiedenis der portugeesche joden te Amsterdam 1593-1925. *Amsterdam, M. Hertzberger*, 1925.

DAVIS, DAVID D.: The principles and practice of obstetric medicine, in a series of systematic dissertations on midwifery and on the diseases of women and children. *London, Printed for Taylor and Walton*, 1836. 2 v. plates 27½ cm.

DAVIS, NATHAN SMITH (1817-1904): History of medical education and institutions in the U. S. *Chicago, S. C. Griggs & Co.*, 1851.

Death's doings: consisting of numerous original compositions in prose and verse, the friendly contributions of various writers. Illustrations by R. Dagley. *London, J. Andrews*, 1826.

DEFOE, DANIEL (1661-1731): The his-

tory of the great plague in London in the year 1665. New ed. *London, Renshaw & Rush*, 1832. vii, 311 p. engr. fronts. 17½ cm.

DEKKERS, FREDERICUS (1648-1730): Exercitationes practicae circa medendi methodum. . . . Editio altera. *Lugduni Batavorum, Jordanus Luchtmans, Cornelius Boutesteyn*, 1694. 722 p. engr. fronts. & plates 20 cm.

DELEURYE, FRANÇOIS-ANGES Traité des accouchemens, en faveur des élèves. . . . Seconde édition. *Paris, P. Fr. Didot, le jeune*, 1777. xi, 556 p. 20 cm.

DENMAN, THOMAS: Aphorisms on the application and use of the forceps and vectis. First American from the sixth London ed. . . . *Phila., Jas. Webster*, 1818. 88 p. 10½ cm.

———: An introduction to the practice of midwifery. From the last London edition, revised by the author. With notes and emendations by John W. Francis. *New York, E. Bliss & E. White*, 1821. 683 p. 21½ cm.

DESCARTES, RENÉ (1596-1650): Tractatus de homine, et de formatione foetus. Quorum prior notis perpetuis Ludovici de la Forge, M. D. illustratur. *Amstelodami, Daniel Elsevirius*, 1677. 239 p. woodcuts 19½ cm.

———: De homine figuris, et Latinitate donatus a Florentio Schuyl. . . . *Lugduni Batavorum, ex officina Hackiana*, 1664. 121 p. fine engr. plates 19½ cm.

DEVENTER, HENDRIK VAN (1651-1724): The art of midwifery improv'd. . . . Written in Latin by Henry a Daventer. Made English . . . *3rd ed. London, Printed for A. Bettesworth* . . . 1728. 328 p. plates 20 cm.

———: Manuale operatien, zynde een nieuw ligt voor vroed — meesters en vroedvrouwen. . . . Vierde druk. . . . *Amsterdam, Jan Morterre*, 1765. 555 p. plates 21 cm.

———: Observations importantes sur le manuel des accouchemens . . . traduites du Latin par Jacques-Jean Bruhier d'Ablaincourt. . . . *Paris, Pierre Prault*, 1733. xxxix, 431 p. plates, 25 cm.

———: Operationes chirurgicae novum lumen exhibentes obstetricantibus. . . . *Lugduni Batavorum, Andreas Dyckhuisen*, 1701. 274 p. fronts. plates 20 cm.

DEVAUX, JEAN (1649-1729): Index Funereus chirurgorum Parisiensium, ab anno 1315 ad annum 1714. *Trivoltii, Stephanus Ganeau*, 1714. vi, 126 p. 14½ cm.

DEWEES, WILLIAM POTTS (1768-1841): A compendious system of midwifery, *Phila., Carey, Lea & Carey*, 1828. 640 p. engr. plates 22 cm. 3rd ed.

———: An essay on the means of lessening pain, and facilitating certain cases of difficult parturition . . . *2nd ed. Phila., Thos. Dobson & Son*, 1819. 156 p. 23 cm.

DICKINSON, W. HOWSHIP: The Harveian oration on Harvey in ancient and modern medicine. *London, Longmans Green & Co.* 1891.

DIEMERBROECK, YSBRAND VAN (1609-74): Anatome corporis humani. . . . Editio nova. . . . *Lugduni, Marcus & Joan. Henricus Huguetan*, 1683. 606 p. engr. t. p. & plates 24½ cm.

———: Opera omnia, anatomica et medica . . . collecta & diligenter recognita, per Timannum de Diemerbroeck, Isb. Fil. *Ultrajecti, Mainardus a Dreunen & Guilielmus a Walcheren*, 1685. 574 p. engr. fronts. (port.) & t. p. & plates. 31½ cm. (contains also: I. Tractatus de peste, 303 p. II. Observationes et curationes medicae centum . . . 132 p. III. Disputationes

practicae de morbis capitis, thoracis, et infimi ventris 70 p.)

DIGBY, SIR KENELM (1603-65): Two treatises: in the one of which, the nature of bodies; in the other, the nature of man's soul. . . . *London, John Williams*, 1658. 144 p. 19 cm.

———: Discours fait en une celebre assemblée . . . touchant la guerison des playes par la poudre de sympathie. *Paris, A. Courbe & P. Moet*, 1658. 127 p. 13 cm.

DINOUART, JOSEPH-ANTOINE-TOUSSAINTS: Abrégé de l'embryologie sacrée, ou traité des devoirs de prêtres. *Paris, Nyon*, 1766. xxvii, 596 p. engr. plates 16½ cm. 2nd ed.

DIONIS, PIERRE (d. 1718): The anatomy of humane bodies improv'd. . . . *London, printed for R. Bonwicke, etc.* 1716. 451 p. engr. plates 19½ cm. 2nd ed.

———: A course of chirurgical operations, demonstrated in the Royal Garden at Paris. Translated from the Paris edition . . . *2nd ed. London, printed for J. Tonson*, 1733 . . . 496 p. engr. fronts. woodcuts and plates 20 cm.

———: A general treatise of midwifery. Translated from the French. . . . 1st English ed. *London, A. Bell, etc.* 1719. XV, 374 p. 20 cm.

———: Traité général des accouchemens. . . . *Paris, Chas. Maurice d'Houry*, 1718. xix, 488 p. fronts. 19½ cm.

DIOSCORIDES, ANAZARBEUS PEDACIUS (1st cen. A. D.): . . . De medica materia libri V. De letalibus venenis . . . liber unus . . . Interprete Marcello Vergilio. . . . *Coloniae, Joannes Soteres*, 1529. 753 p. 30 cm. (1st Greek-Latin ed.)

———: De medica materia, libri sex. Joanne Ruellio . . . interprete. . . . *Lugduni, Theobaldus Paganus*, 1547. 543 p. 12 cm.

DISDIER, FRANÇOIS-MICHEL (1708-1784): Exposition exacte ou tableaux anatomiques. . . . *Paris, Jean de Beauvais*, 1784. 57 p. engr. t. p. & plates 37½ cm.

The Doctor and the Apothecary. A musical entertainment in two acts, as performed at the Theatre-Royal, Drury-Lane. *London, Printed for C. Dilly*, 1788. 44 p. 21 cm.

DODONAEUS, REMBERTUS (1517-1585): Historia frumentorum leguminum, palustrium et aquatilium herbarum. *Antuerpiae, Christophorus Plantinus*, 1569. 291 p. woodcuts 16½ cm.

DOUGLAS, JAMES (1675-1742): Myographiae comparatae specimen. *Edinburgh, printed for A. Kincaid, etc.* 1750. xxxii, 219 p. 16½ cm.

DOUGLAS, JOHN (1743): Lithotomia Douglassiana: or, A new method of cutting for the stone. *London, printed for C. Rivington*, 1723. 126 p. 22½ cm.

DOVER, THOMAS (1662-1742): The ancient physician's legacy to his country. 6th ed. 247 p. 20½ cm. *London, H. Kent*, 1742.

DOWNMAN, HUGH (1740-1809): Infancy, or the management of children: a didactic poem in six books. 7th ed. . . . *Exeter, Trewman & Son, etc.* 1809. 263 p. 18 cm.

DRAKE, DANIEL (1785-1852): A Systematic Treatise . . . on the Principal Diseases of the Interior Valley of North America. *Winthrop B. Smith, Cincinnati; Grigg, Elliot & Co., Phila.; Mason & Law, New York*, 1850. 877 p.

———: Principal diseases of the interior valley of North America. Second Series. *Lippincott, Grambo & Co., Philadelphia*, 1854.

———: A practical treatise on the history, prevention, and treatment of epidemic cholera. . . . *Cincinnati, Corey & Fairbank*, 1832. 180 p. 19½ cm.

DRAKE, JAMES (1667-1707): Anthropologia nova . . . 3rd ed. corrected. With a preface by W. Wagstaffe, M. D. . . . *London, printed for Wm. Innys*, 1750. 2 v. engr. fronts. & plates. 20½ cm.

DRELINCOURT, CHARLES (1633-97): De partu octimestri vivaci diatriba. Editio tertia. . . . *Parisiis, Andreas Cramoisy*, 1668. 40 p. 20 cm.

DUTTON, WALTON FORREST: Historical Outline of Intravenous Therapy. 1924.

DUVAL, JACQUES: Des hermaphrodits, accouchemens des femmes. *Rouen, D. Geuffroy*, 1612. 447 p. 15½ cm.

EGDAHL, MAJ. ANFIN: Some of the medical contributions of Linnaeus. *The Military Surgeon, February*, 1923. Pp. 166-186.

EGYPTIAN MEDICINE: A critical dissertation on the mandrake of the antients; with some observations on the Egyptian, Grecian and Roman literature, botany and medicine. . . . *London, T. Gardner*, 1737.

The Eclectic Journal of Medicine. Ed. by John Bell, *Phila., Haswell, etc.* 1837-1839.

ELYOT, SIR THOMAS (1490-1546): The castell of helth, corrected and in some places augmented by the first author. 1541. 98 p. 13 cm. (colophon missing.)

EMMET, THOMAS ADDIS: A radical operation for procidentia. . . . *New York, J. M. Bradstreet & Son*, 1865.

An Empire Without a Doctor. *Every Saturday*. July 4, 1868. *From St. James Mag.* Pp. 10-12.

ENGELMANN, GEORGE J.: Labor among primitive peoples. . . . *St. Louis, J. H. Chambers & Co.* 1882.

EUSTACHIUS, BARTHOLOMAEUS (1520-74): Tabulae anatomicae. . . . Praefatione, ac notis illustravit Joh. Maria Lancisius. . . . Ed. Romana altera. *Romae, Laurentius & Thomas Pagliarinus ex typographia Rochi Bernabo*, 1728. xxviii, 79 p. engr. plates 37 cm.

Extracts from a Diary Kept During the Yellow Fever Plague in Philadelphia, 1798. *Records Am. Cath. Hist. Soc.*, Dec. 1902. Pp. 486-496.

The excellencie of physick and chirurgerie collected out of approved practices, and learned observations of many expert men in both faculties. *London, G. D.*, 1652. 92 p. 18½ cm.

EYTZING, MICHAEL VON: Nova quaestionum solutio. . . . *Augsburg, Philipp Ulhart*, 1566. 31 cm.

FABER, KNUD: Nosography in modern internal medicine. *New York, Paul B. Hoeber*, 1923.

FABRICIUS, GUILIELMUS HILDANUS (1560-1634): . . . Opera observationum et curationum et medico-chirurgicarum. . . . *Francofurti, Joannes Beyert*, 1646. 1044 p. engr. t. p. woodcuts 33 cm. Also contains: Severinus, Marcus Aurelius: De efficaci medicina lib. III. . . .

FABRICIUS AB AQUAPENDENTE, HIERONYMUS (1537-1619): . . . De visione, voce, auditu. *Venetiis, Franciscus Bolzetta*, 1600. In 3 pts. plates 34½ cm.

———: Opera chirurgica. *Patavii, Franciscus Bolzetta*, 1647. fronts. plates 31½ cm.

FAIRFIELD, F. G.: A Study in Apparent Death. *Scribner's*, Dec. 1880, Pp. 248-257.

FAIRFAX FAMILY: Arcana Fairfaxiana manuscripta. Reproduced in facsimile. Intro. by George Weddell. *London, Elliot Stock*, 1890. 206 p. 22 cm.

FALCONER, WILLIAM: A dissertation on the influence of the passions upon disorders of the body . . . *3rd ed. London, Printed for C. Dilly*, 1796. 176 p. 15½ cm.

FALLOPIUS, GABRIEL (1523-1562): De medicatis aquis, atque de fossilibus tractatus pulcherrimus ac maxime utilis ab Andrea Marcolino Fanestri . . . collectus . . . *Venetiis, L. Auantius*, 1564.

FARNSWORTH, F.: Doctor Terrell investigates, and other writings. . . . *Charleston, W. Va., Tribune Print. Co. (n.d.)*

FAUST, BERNHARD CHRISTOPH: Untersuchung des Werths der Trennung der Schoosbeine bei schweren Geburten. . . . *Gotha, C. W. Ettinger*, 1780. 92 p. 18 cm.

FERGUS, JOHN F.: A Short Sketch of the History of Early Medicine. *Glasgow Medical Journal*, Aug. 1922. Pp. 81-192.

FERGUSON, JOHN: On a copy of Albertus Magnus' "De secretis mulierum" . . . *Westminster, Nichols & Sons*, 1886.

FERNELIUS AMBIANUS, JOANNES (1497-1558): . . . Therapeutices universalis, seu medendi rationis, libri septem. . . . *Francofurti, Andreas Wechelus*, 1581. 562 p. 17 cm. Bound with: De abditis rerum causis libri duo. 272 p.

———: . . . Universa medicina, tribus et viginti libris absoluta. . . . *Paris, Andreas Wechelus*, 1567. 35 cm.

FERRI, ALPHONSO (1515-95): De sclopetorum sive archibusorum vulneribus, libri tres. . . . *Lugduni, Mathias Bonhomme*, 1553. 123 p. 19 cm.

FICINUS FLORENTINUS, MARSILIUS (1433-99): . . . De vita, libri tres. . . . *Lugduni, Guliel. Rovil*, 1566. 401 p. 12 cm.

FIENUS, THOMAS (1567-1631): Pro sua de animatione foetus tertia die opinione apologia adversus Ant. Ponce Sanctacruz. . . . *Lovanii, Henricus Hastenus*, 1629. 255 p. 19 cm.

FINNEY, J. M. T.: A Personal Appreciation of Sir William Osler. *Journal of A. M. A.* Vol. 77, No. 6. Pp. 2013-2019.

FISHBEIN, MORRIS: The Rise and Fall of Homeopathy. *American Mercury*, June, 1924. Pp. 150-153.

FLINT, AUSTIN: Medical ethics and etiquette. *New York, D. Appleton & Co.* 1883.

———: Medicine of the future. *New York, D. Appleton & Co.* 1886.

FLOYER, JOHN (1649-1734): Psychrolusia. *6th ed. London, Printed for W. Innys, etc.* 1732. 491 p. 19½ cm.

DE FONTECHA, JUAN ALONSO Y DE LOS RUYZES: Diez previlegios para mugeres prenadas . . . con un diccionario medico. . . . *Alcalà de Henares, Por Luys Martynez Grande*, 1606. 230 p. 11½ cm.

FOOTE, JOHN: Trees in Medicine. *American Forestry*, Nov. 1916. Pp. 648-653.

FORBES, EDGAR ALLEN: Is the Doctor a Shylock? *World's Work*, May, 1907. Pp. 8892-8896.

FORESTUS, PETRUS (1522-97): De incerto, fallaci, urinarum judicio, quo uromantes, ad perniciem multorum aegrotantium, utuntur . . . libri tres. . . . *Lugduni Batavorum, Franciscus Raphelengius*, 1589. 318 p. 15½ cm.

FORREST, WILLIAM S.: The great pestilence in Virginia; being an historical account of the origin, general character and ravages of the yellow fever in Norfolk & Portsmouth, in 1855. *New York, Derby & Jackson*, 1856. 326 p. fronts. 18 cm.

FRACASTORIUS, HIERONYMUS (1483-1553): Della sifilide. Ovvero del

morbo Gallico libri 111. Volgarizzati da Vincenzo Benini Bolognese. . . . *Bologna, Lelio dalla Volpe.* 1765. 171 p. engr. fronts. 18½ cm.

———: Della sifilide a Pietro Bembo, libri tres. Nuovamente volgarizzati da Antonio Tirabosco. . . . *Verona, Dionici Ramanzini,* 1739. 82 p. engr. fronts. (port.) 23½ cm.

———: Opera omnia . . . Tertia editione . . . Venetiis, apud Iuntas, 1584. 215 p. 24½ cm.

———: Anthologia, seu selecta quaedam poemata Italorum qui Latine scripserunt. . . . *Londini, R. Green, & F. Hicks,* 1684. 216 p. 14½ cm.

FRANCIS, SAMUEL W.: Report of Professor Valentine Mott's surgical cliniques in the University of New York session 1859-60. *New York, S. S. & W. Wood,* 1860.

FRANK, LOUIS F.: Pompeian Surgical Instruments. *Journal of A. M. A.* Vol. LIV, No. 12. Pp. 934-938.

FRANK, MORTIMER: Medicine Depicted in English Literature before the 18th Century. *Journal of A. M. A.* Vol. LVIII, No. 21. Pp. 1569-1576.

FREEMAN, LEONARD: Primitive Surgery of the Western Hemisphere. *Journal of the A. M. A.* Vol. 70, No. 7. Pp. 443-448.

FREEMAN, S.: The new good Samaritan. *London, Printed for the author, n. d.* 432 p. engr. 16½ cm.

FREIND, JOHN (1675-1728): Emmenologia: Written in Latin by . . . Dr. John Freind. Translated into English by Thomas Dale. *London, printed for T. Cox,* 1729. 216 p. 19½ cm.

———: The history of physick. . . . *3rd ed. London, J. Walthoe,* 1726. 2 v. 19½ cm.

———: Opera omnia medica. *Londini, Johannes Wright,* 1733. xxx, 591 p. engr. fronts. (port.) 37 cm.

FRIEDENWALD, HARRY: Jewish Doctoresses in the Middle Ages. *Medical Pickwick,* June 1918. Pp. 283-284.

———: A Modern Hebrew Satire on Physicians. *Medical Pickwick,* Aug. 1920, pp. 211-213.

FULLER, FRANCIS: Medicina gymnastica. *5th ed. London, printed for Robert Knaplock,* 1718. 271 p. 19 cm.

G. W.: A rich store-house, or Treasury for the diseased. *London, John Clowes,* 1650. 8th ed., augmented & enlarged by D. Border . . . 274 p. 18 cm.

GALEN (130-200 A. D.): Expositio Ugonis Senensis super aforismos Hippocratis: super commentum Galeni eius interpretis. *Venice, Octavius Scotus,* 1517.

———: Liber prognosticorum Hippocratis Coi . . . additis annotationibus in Galeni commentarios. Authore Christophoro a Vega, Medico . . . Secunda aeditio. . . . *Salmanticae, Andreas a Portonariis,* 1552.

———: . . . De naturalibus facultatibus, libri tres. *Parisiis, Christianus Wechelus,* 1537. 77 p. 26 cm.

———: Omnia quae extant opera. . . . *Venetiis, Haeredes Lucae-Antonii Iuntae Florentini,* 1550. 113 p. 35½ cm.

———: Opera. N. Leoniceno interprete. . . . *Parisiis, Henricus Stephanus,* 1514. 21 cm.

———: Opera. *Venetiis, apud Iuntas,* 1625. 34 cm.

———: . . . De simplicium medicamentorum facultatibus libri undecim. . . . Theodorico Gerardo Gaudano interprete. . . . *Parisiis, Jacobus Gazellus,* 1547. 352 p. 12 cm.

———: De temperamentis, et de inaequali intemperie. Libri tres. Thoma Linacro Anglo interprete. *London, C. J. Clay,* 1881. 48 p. fronts. (18½ cm.) (Reproduced in facsimile, with

an introduction by Joseph Frank Payne.)

———: De usu partium corporis humani libri xvii . . . Nicolao Regio Calabro interprete. . . *Basileae, Andr. Cratander et Ioan. Bebelius*, 1533. 200 p. 30 cm.

GANIVETUS, JOHANNIS (15th cent.): Amicus medicorum . . . Cum opusculo, quod inscribitur, Coeli Enarrant: & cum abbreviatione Abrahae Aveneezrae de luminaribus, & diebus criticis. . . . *Lugduni, Gulielmus Rouillius*, 1550. 585 p. 12 cm.

GARBO, THOMAS DE (d. 1370): . . . Summa medicinalis. . . . *Venice, Octavius Scotus*, 1531. 120 p. Bound with: Avenzoar: Colliget Aver. . . . Abhomeron Abinzoar libius theysir. . . . *Venice, Octavius Scotus*, 1530. 109 p. woodcut 30 cm.

GARDIEN, CLAUDE-MARTIN: Traité complet d'accouchemens et des maladies des filles, des femmes et des enfans. . . . *2nd ed. Paris, Crochard, etc.* 1816. 4 v. 20 cm.

GARDINER, E. J.: An Old Time Victim of Ametropia. *A. M. A. Journal*, Vol. 72, No. 20. Pp. 1439-1441.

GARDNER, AUGUSTUS KINSLEY: Old wine in new bottles or, Spare hours of a student in Paris. *New York, C. S. Francis & Co.* 1848.

GARNETT, THOMAS (1766-1802): Popular lectures on zoonomia, or The laws of animal life in health and disease. *London, W. Savage*, 1804. 325 p. fronts. (port.) 20 cm.

GARRISON, FIELDING H.: The principles of anatomic illustration before Vesalius. . . . *New York, Paul B. Hoeber*, 1926.

GARTH, SIR SAMUEL (1661-1719): The dispensary. A poem in six cantos . . . *3rd ed. London, John Nutt*, 1699. 94 p. 18½ cm.

———: The poetical works with the life of the author. . . . *Edinburgh, Apollo Press*, 1779. 216 p. eng. port. 12½ cm.

GAZIUS, ANTONIUS (1461-1528): Corona Florida medicinae: sive conservatio sanitatis. *Venetiis per Johannem de Forliuio & Gregorium fratres*, 1491. p. 31 cm.

GEIJL, A.: De geschiedenis van het roonhuysiaansch geheim. *Rotterdam, M. Boogaerdt*, 1905.

GENTILI, GIOVANNI: Relazione di un individuo della specie umana. . . . *Firenze, S. M. Maggiore*, 1782. 20 p. plate 20 cm.

GERARDE, JOHN (1545-1612): The herball, or Generall historie of plantes. . . . *London, John Norton*, 1597. 1932 p. engr. t. p. & port. woodcuts 33½ cm.

GIBSON, THOMAS: The anatomy of humane bodies epitomized . . . *6th ed. London, printed by T. W.* 1703. VII, 632 p. 18½ cm.

GIFFARD, WILLIAM: Cases in midwifery . . . Revis'd & publish'd by Ed. Hody, M. D. *London, printed for B. Motte, etc.* 1734. vii, 520 p. plates 19½ cm.

GLAUBER, JOHANN RUDOLF (1603-70): Operis mineralis oder vieler kunstlichen und nutzlichen metallischen arbeitten beschreibung. *Amsterdam*, 1651-52. 3 parts 15 cm.

GLISSON, FRANCIS (1597-1677): Anatomia hepatis. . . . *Amstelaedami, Joannes a Ravesteinii*, 1659. 552 p. engr. t. p. 13 cm.

———: De rachitide sive morbo puerili, qui vulgo "The Rickets" dicitur. . . . *Londini, Typis Th. Roycroft*, 1660. 378 p. 15 cm.

———: Tractatus de ventriculo et intestinis. . . . *Amstelodami, Jacobus Juniores*, 1677. 591 p. 13½ cm. engr. fronts. (port.) & plates.

GODDARD, PAUL BECK (1809-66): Plates

of the arteries, with references for the use of medical students. . . . *Phila., J. G. Auner*, 1839. 49 p. plates 29½ cm.

GODLEE, SIR RICKMAN J.: The Hunterian oration. Delivered at the Royal College of Surgeons, 1913. *London, J. Bale Sons, etc.* (*n. d.*)

GOODALL, CHARLES (1642-1712): The Royal College of Physicians of London, and an historical account of the College's proceedings. *London, M. Flesher*, 1684. 472 p. 19½ cm. (Dr. Sydenham's copy, presented by the author.)

GOODHART, SIR JAMES F.: Harveian oration, 1912. *London*, 1912.

GOODHUE, E. S.: George F. Butler, M. D. *Medical Pickwick*, Nov. 1921, Vol. VII No. 11. P. 403.

GOULARD, THOMAS (fl. 1746-84): A treatise on the effects and various preparations of lead . . . Translated from the French of Mr. Goulard. *3rd ed. London, printed for P. Elmsly*, 1772. 228 p. 16½ cm.

GOULD, GEORGE M.: Is Medicine a Science? *Forum*, Dec. 1889. Pp. 417-427.

DE GRAAF, REGNIER (1641-73): Opera omnia. *Lugduni Batavorum, Hackiana*, 1677. 719 p. engr. t. p. & plates 16½ cm.

GRANVILLE, AUGUSTUS BOZZI (1783-1872): Graphic illustrations of abortion and the diseases of menstruation. *London, C. Woodfall*, 1833. xxii, 49 p. plates 29 cm.

GREEN, SAMUEL ABBOTT: Notes on a copy of Dr. William Douglass's almanack for 1743. Touching on the subject of medicine in Massachusetts. *Cambridge, John Wilson and son*, 1884.

DE GREGORINI, GERASIMUS CONSTANTINI: De hydrope uteri et de hydatidibus, in utero visis aut ab eo exclusis . . . *Halae, typ. Batheanis*, 1795. 72 p. plates 26½ cm.

GREGORY, JOHN (1724-73): On the duties and qualifications of a physician . . . *New edition. London, printed for John Anderson*, 1820. 182 p. 16 cm.

GREGORY, OLINTHUS: Memoirs of the life, writings and character of the late John Mason Good. *Boston, Crocker & Brewster*, 1829.

GREW, NEHEMIAH (1641-1712): Cosmologia sacra; or, A discourse of the universe as it is the creature and kingdom of God, in five books. *London, printed for W. Rogers, etc.*, 1701. 372 p. fronts. 32 cm.

GRIGG, JOHN: Advice to the female sex in general, particularly those in a state of pregnancy, and lying-in. *Bath, S. Hazard*, 1789. viii, 319 p. 20½ cm.

GROSS, SAMUEL D. (1805-84): Brunonianism, Toddism, and Other Isms. *North American Medico-Chirurgical Review*, January, 1861. Pp. 3-20.

———: John Hunter and his pupils. *Phila., Presley Blakiston*, 1881.

———: Practical Observations upon the Nature and Treatment of Prostatorrhoea. *North American Medico-Chirurgical Review*. Pp. 3-9.

GUERARD, B.: Untersuchung und lehre uber den durchschnitt der schaambeine . . . *Munster, P. H. Perrenon*, 1781. 175 p. 16½ cm.

GUIDI, GUIDO (1500-69): Opera omnia, sive ars medicinalis, in qua cuncta quae ad humani corporis . . . pertinent . . . explicantur. *Venetiis, apud Iuntas*, 1611. 3 v. bound in 4 34½ cm. (First collected ed. of Guidi's works ed. by his nephew, Guidi the younger. Contains as part of Vol. 2 the De curatione membratim of Guidi, Jr. See next reference).

GUIDI, GUIDO, JR.: . . . De curatione

membratim, libri XI. Ad Vidum Vidium seniorem . . . *Venetiis, apud Iuntas*, 1611. 890 p. 34½ cm.

GUIDOTT, THOMAS (1638—post 1697): A Discourse of Bathe, and the Hot Waters there, with an account of the lives and character of the Physicians of Bathe. *London, printed for Henry Brome*, 1676. 200 p. fronts. 17 cm.

———: . . . De thermis Britannicis tractatus, accesserunt observationes hydrostaticae, chromaticae. *London, Franciscus Leach*, 1691. 412 p. engr. t. p. & plates 20 cm.

GUILLAIN, GEORGES ET MATHIEU, P.: La salpêtrière. *Paris, Masson et Cie.*, 1925.

GUILLEMEAU, JACQUES (1550-1613): Child-birth, or The happy delivery of women. *London, Anne Griffin for Joyce Norton & Richard Whitaker*, 1635. 247 p. 18 cm. (*2nd ed.*) (Bound with: The Nursing of children, written in French by James Guillemeau). Only 2 other copies known.

———: De la grossesse et accouchement des femmes, *2nd ed. Paris, Abraham Pacard*, 1621. 1049 p. 16½ cm. (Bound with: Traicté des abus qui se commetent sur les procedures de l'impuissance des hommes et des femmes, 42 p.)

———: Les oeuvres de chirurgie, *Rouen, Jean Viret*, 1649. 863 p. engr. plates, 35½ cm.

GUY'S HOSPITAL: Syllabus of Lectures on midwifery delivered at Guy's Hospital by Dr. Haighton. *London, E. Cox & Son*, 1814.

Gynaeciorum, hoc est, de mulierum tum aliis, tum gravidarum parientium et puerperarum affectibus et morbis, libri . . . *Basileae, Thomas Guarinus*, 1566. 867 p. 21½ cm. (Bound with: Moschion, Peri gynaikeion pathon . . . 1566. 63 p.)

HAIGHTON, DR.: A syllabus of the lectures on midwifery delivered at Guy's Hospital. *London, E. Cox & Son*, 1814.

HALES, STEPHEN (1677-1761): Haemastatique, ou la statique des animaux. *Genève, Cramer & Frères Philibert*, 1744. xxii, 348 p. 24½ cm.

HALLER, ALBRECHT VON (1708-77) Deux mémoires sur le mouvement du sang, et sur les effets de la saignée. *Lausanne, Marc-Mich. Bousquet & Comp.*, 1756. viii, 343 p. engr. fronts. 16½ cm.

———: Disputationes ad morborum historiam et curationem facientes. *Venetiis, Haeredes Baglioni*, 1757. 7 v. 24½ cm.

———: Historia stirpium indigenarum Helvetiae inchoata. *Bernae, Dan. Brunnerus & Alb. Hallerus*, 1768. 3 v. in 2. engr. t. p. & plates, 39 cm.

———: Opuscula sua anatomica de respiratione, de monstris . . . *Gottingae, Jo. Wilh. Schmidt*, 1751. 358 p. engr. plates 18½ cm.

HAMILTON, ALEXANDER (1712-56): Outline of the theory and practice of midwifery . . . *New ed. Phila. Thomas Dobson*, 1797. 288 p. 21 cm. (Bound with: William Smellie, A Set of anatomical tables with explanations, & an abridgement of the practice of midwifery. *Phila., T. Dobson*, 1797. 98 p. illus.)

HAMMOND, WILLIAM A.: The Elixir of Life. *North American Review*, Sept., 1889. Pp. 257-504.

HANCOCKE, JOHN: Febrifugum magnum. *4th ed. London, Printed for R. Halsey*, 1723. 80 p. 19 cm.

HARLE, JONATHAN: An historical essay on the state of physick in the old and new testament and the apocryphal interval. *London, Richard Ford*, 1729. viii, 180 p. 22 cm.

HARRIS, WALTER (1647-1732): Pharmacologia anti-empirica: or, A rational discourse of remedies both chymical and Galenical . . . *London, Richard Chiswell*, 1683. 332 p. 18 cm.

———: De morbis acutis infantum . . . *Amstelodami, Georgius Gallet*, 1698. 55 p. 20½ cm.

HARTMANN, GEORG V.: Epistola, de bruto ex homine . . . *Erfordiae, C. Frider*, 1733. 32 p. fronts. 19 cm.

HARVEIAN ORATION: Mead (1724), Johnstone (1837), Acland (1865), Pavy (1886), Latham (1888), Andrew (1890), Dickinson (1891), Pye-Smith (1893), Brunton (1894), Payne (1896), Moore (1901), Caton (1904), Roberts (1905), Taylor (1907), Savage (1909), Donkin (1910), Goodhart (1912), Bruce (1913), Coupland (1915),, Andrews (1920), Chaplin (1922), Rolleston (1928).

HARVEY, GIDEON (1640-1700): The art of curing diseases by expectation: *London, Printed for James Partridge*, 1689, 224 p. 15 cm.

———: The conclave of physicians . . . *London, Printed for James Partridge*, 1683. 228 p. 14 cm.

———: The family physician and the house-apothecary. *3rd ed. rev. & enl. London, Printed for A. Roper*, 1704. 172 p. 15½ cm.

HARVEY, SAMUEL CLARK: The history of hemostasis. *New York, Paul B. Hoeber*, 1929.

HARVEY, WILLIAM (1578-1657): The anatomical exercises of Dr. William Harvey. *London, Printed for Richard Lowndes, at the White Lion in Duck Lane, and Math. Gilliflower at the Sun in Westminster Hall*, 1673.

———: The anatomical exercises of Dr. William Harvey. De motu cordis, 1628: De circulatione sanguinis 1649. The first Eng. text of 1653 now newly edited by Geoffrey Keynes. *London, Nonesuch Press (n. d.)*, 202 p. engr. plates 20 cm.

———: Anatomical exercitations, concerning the generation of living creatures. *London, James Young*, 1653. 566 p. fronts. 16½ cm.

———: Exercitatio anatomica de motu cordis et sanguinis in animalibus . . . *Francofurti, Guilielmus Fitzerus*, 1628. (facsimile, 1928.)

———: . . . Exercitatio anatomica de motu cordis et sanguinis. Cum praefatione Zachariae Sylvii . . . Accessit dissertatio de corde Doct. Jacobi de Back . . . *Roterodami, A. Leers*, 1648. 215 p. 219 p. 12 cm.

———: Exercitationes de generatione animalium. *Amstelodami, Ludovicus Elzevirius*, 1651. 568 p. 13½ cm.

———: Exercitationes de generatione animalium. *Hagae, A. Leers*, 1680. 582 p. 13 cm.

———: Opera. Sive exercitatio anatomica de motu cordis et sanguinis in animalibus. Editio novissima. *Lugduni Batavorum, Johannes van Kerckhem*, 1737. 404 p. engr. plates 20 cm. (1st collected edition of Harvey's works)

———: The portraits of Dr. William Harvey. London, etc. *Published for the Historical Section of the Royal Society of Medicine by Humphrey Milford. Oxford University Press*, 1913.

HAYDEN, WILLIAM R.: Anaesthesia; or, Some Broken Chapters in the Life of William Thomas Green Morton. *Bedford Springs, Mass., The New York Pharmaceutical Company*, 1894.

HAYES, I. J.: Doctor Molke's Friends. *Century*, Jan.-Apr. 1868. Pp. 37-68.

HEALDE, THOMAS: Oratio anniversaria, 1765. 26 p. 25½ cm.

HEBERDEN, WILLIAM (1710-1801): Commentaries on the history and

cure of diseases. *4th ed. London, Payne & Foss*, 1816. 431 p. 22 cm.

———: An introduction to the study of physic . . . *New York, Paul B. Hoeber*, 1929.

———: On education. A dialogue after the manner of Cicero's philosophical disquisitions. *London, Payne & Foss*, 1818.

HEISTER, LORENZ (1683-1758): A general system of surgery, in three parts, *8th ed. London, Printed for J. Whiston, etc.* 1768. 414 p. plates 26½ cm.

HEKTOEN, LUDVIG: Old and New Knowledge of Immunity. *Journal of A. M. A.*, Vol. 77, No. 25, Pp. 1935-1939.

VAN HELMONT, JAN BAPTISTA (1577-1644): Ortus medicinae. Id est initia physicae inaudita. *Amsterodami, Ludovicus Elzevirius*, 1652. 894 p. engr. port. 20 cm.

HELMUTH, WILLIAM TOD: With the "Pousse cafe." Being a collection of post prandial verses. *Phila., Boericke & Tafel*, 1892.

HELVIGIUS, CHRISTOPHORUS: Consilium medicum de peste . . . *Alten Stettin, Daniel Starcken*, 1683. 232 p. 18 cm.

HEMMETER, JOHN C. & ZUEBLIN, ERNEST: The Radio-Activity of the Mineral Waters of Hot Springs, Warm Springs and Healing Springs in Hot Springs, Virginia. *Philadelphia, H. T. W. & C.*

HENDRICK, BURTON J.: American Contributions to Medical Science. *Harper's*, June, 1914, Pp. 25-32.

———: The New Medical Ethics. *McClure's*, Jan. 1914, Pp. 117-125.

HIGHMORE, NATHANAEL (1613-85): Corporis humani disquisitio anatomica. . . . *Hagae-Comitis, Samueles Broun*, 1651. 262 p. engr. t. p. & plates. 28 cm.

HILLIER, S.: Medical and surgical science, its conception and progress. *New York, Fred A. Stokes Co.* (*n. d.*)

HINSDALE, GUY: American Mineral Springs: With Special Reference to the Thermal Springs of Virginia and Methods Employed in Their Use. *Philadelphia, J. B. Lippincott Co.*, 1916. *Reprinted from International Clinics*, Vol. II, Series 26, pages 37-42.

———: Acromegaly. *Detroit, Wm. M. Warren*, 1898.

HINSHAW, WILLIAM: A doctor's confession. *Des Moines, Baker-Tresler Co.* (c. 1903).

HIPPOCRATES (460-377 B. C.): The aphorisms of Hippocrates, and the sentences of Celsus, by Sir Conrad Sprengell. *London, Printed for R. Wilkin, etc.* 1735. 435 p. 19½ cm.

———: . . . Opera: *Basileae, Andreas Cratanderus*, 1526. 494 p. 32 cm.

———: . . . Liber prior de morbis mulierum . . . Mauricio Cordaeo Rhemo interprete & explicatore. *Parisiis, Dionysius Duvallius*, 1585. 361 p. 34 cm.

———: Libri omnes. *Basileae, Froben.*, 1538. 562 p. 31 cm.

———: Expositio Ugonis Senensis super Aforismos Hippocratis: super commentum Galeni eius interpretis. *Venice, Octavius Scotus*, 1517. 159 p. 31 cm.

———: Liber prognosticorum Hippocratis Coi . . . Secunda aeditio, *Salmanticae, Andreas a Portonariis*, 1552. 384 p. 29½ cm.

———: Oeconomia Hippocratis, alphabeti serie distincta. *Francofurti, Andreae Wecheli heredes, etc.* 1588, 694 p. 32 cm. (Wm. Cullen's copy with book-plate).

———: Ὅρκος, sive Jusjurandum. Recensitum . . . a Joanne Henrico Meibomio. *Lugduni Batavorum*,

Jacobus Lauwiickius, 1643. 232 p. 18½ cm.

———: . . . Upon air, water and situation . . . Trans. by Francis Clifton, *London, Printed for J. Watts*, 1734. 389 p. fronts. (port.) 20 cm.

HIRSHBERG, LEONARD K.: Marvellous Preventives of Disease. *World's Work*, April, 1913. Pp. 684-694.

HOOKER, WORTHINGTON: The Present Mental Attitude and Tendencies of the Medical Profession. *New Englander*, Nov. 1852. Pp. 548-568

HOSACK, DAVID (1769-1835): An inaugural discourse delivered at the opening of Rutgers Medical College. *New York, J. Seymour*, 1826. 176 p. fronts. 23½ cm.

HUBARD, JAMES THRUSTON: An Inaugural Dissertation on Puerperal Fever. University of Pennsylvania Thesis. *Philadelphia, John Ormrod*, 1798.

HUNTER, JOHN: *Illus. Magazine of Art*, Oct. 1854. Pp. 209-211.

HUNTT, HENRY: A Visit to the Red Sulphur Spring of Virginia during the Summer of 1837, with Observations on the Water. *Boston, Dutton & Wentworth*, 1839.

HUSSEY, L. M.: American Portraits: Medicine Doctor. *American Mercury*, June, 1924. Pp. 215-223.

HUTCHINSON, WOODS: The Long Giant and His Shortcomings. *American Magazine*, Nov. 1907. Pp. 70-96.

HUXLEY, JULIAN S.: Searching for the Elixir of Life. *Century*, Feb. 1922. Pp. 621-629.

(*Concluded in the next issue*).

NOTES AND COMMENTS

LEOPOLD ANTON GOELIS

A Forgotten Pioneer of Modern Pediatrics

EUGENE STRANSKY

Leopold Anton Goelis was born in Weissenbach, Styria, Austria in the year 1765. A hundred years later Franz Liharzik, a famous pediatrician in Vienna, delivered a speech in the Viennese College of Physicians (Medizinisches Doktorenkollegium) on May 30th, the hundredth anniversary of the birth of Goelis. He called Goelis in his memorial speech the founder of Pediatrics. Although this epithet seems to be exaggerated, there is a grain of truth in it. Goelis was one of the first pioneers of Pediatrics; he restricted his practice and scientific research work to Pediatrics in a time when specialization was almost unknown. when there was no chair for Pediatrics in any College of Medicine. Goelis was never connected after his graduation with any university, had no hospital facilities for his work. He was not appreciated during his life and was soon forgotten after his death. Liharzik being the son-in-law of Goetz, one of the assistants and coworkers of Goelis, received his information from his father-in-law; at this time Goelis had been entirely forgotten. In 1937, at the 150th anniversary of the " Erstes öffentliches Kinderkrankeninstitut " in Vienna, where Goelis worked from 1793 until his death in 1827, Karl Hochsinger, the Director of the institution, published a short history of his dispensary. He tried again to revive the memory of this extraordinarily gifted pediatrician. But even Hochsinger did not discuss the outstanding achievements of Goelis.

Leopold Anton Goelis studied in Vienna, where he graduated in the year 1793 at the age of 28 years. We are not informed about his former life. I have been unable to get any information in Vienna. Immediately after his graduation he became Head of the " Erstes öffentliches Kinderkrankeninstitut," the first dispensary for sick children, not only in Vienna, but as Hochsinger claims, of Europe. There was at this time in Vienna the so-called Findelanstalt, an institution where illegitimate children were placed for the first weeks of life. This Findelanstalt had been established in Vienna in 1784 by Emperor Joseph II in the Alservorstadt, opposite the

General Hospital, which had been inaugurated at the same time. The Findelanstalt had, however, nothing to do with the treatment of sick children. It corresponded to the Ospedale degli Innocenti, established in the 15th century in Florence and later in other cities of Italy. The Dispensary for the Treatment of Sick Children in Vienna was established by Dr. Mastalier in the year 1787. Mastalier, born in 1757, died relatively young on November 1, 1793. Goelis, who was already assistant at the Dispensary, agreed to be the Head of it under the condition that the Dispensary might be recognized by the Government as a public institution for the treatment of poor sick children without any fee for the treatment. This was necessary in Austria because this settlement insured the rights and privileges of a General Hospital. A decision of the Imperial Court dated August 7, 1794 granted public status to the Dispensary and conferred the title of a Director to Goelis with the obligation to treat poor sick children without any fee at least two hours daily. The Dispensary was now under the direct supervision of the Provincial Government of Lower Austria (Niederösterreichische Landesregierung), to be then directly attached for administration to the General Hospital of Vienna. Goelis was Head of the Dispensary until his death in the year 1827. In 1810 he was promoted in honor of his manifold medical activities to sanitary counsellor (Sanitätsrat). Ten years after the death of Goelis the first Hospital for Sick Children (Sankt Annen Kinderspital) was established by Dr. L. Mauthner.

Goelis devoted two hours daily to his Dispensary which was attended by many doctors. His office hours in the Dispensary were on working days 3-5 p. m., on Sunday and holidays 11-12 a. m. He started with his private practice in the Walled City of Vienna (Innere Stadt) at 6 a. m., almost all calls being charity calls without any fee, going from house to house until 8 a. m. Then he hired a horse carriage to continue his calls even in the relatively distant suburbs until noon. As early as the year 1800 he established a public Dispensary for smallpox vaccination. This was the first one in Continental Europe. He vaccinated in a few years no fewer than 16,000 children. Immediately after he started with the vaccination, he published a pamphlet for laymen to popularize the new vaccination among the people of Vienna. In the year 1811 he issued a paper on his observations on the results and all possible untoward effects of smallpox vaccination. It may be admitted that he exaggerated the possible damages of smallpox vaccination and that many details of his work are obsolete; on the other hand it must be stressed that he was the first to emphasize

" expressis verbis " that a single vaccination can not secure a life-long but only a temporary immunity against smallpox. He wrote: ". . . die Vakzine zwar für zwei, oder drey Blatternepidemien, aber keineswegs auf immer, für die ganze Lebenszeit schütze, idem die schon einmal Vakzinierten nach einigen Jahren ansteckungsfähig würden, da sie es doch vorher einige Zeit nicht waren und fruchtlos geimpft wurden. Es sey daher ungewiss, ob? und wie viel Vaccinierte? über wie kurz, oder lang noch nachblatten werden, wird die Zukunft lehren." Afterwards Goelis did not continue his researches in this field. This may be due to the fact that the College of Medicine of the University of Vienna issued a very abusive criticism on Goelis' paper on vaccination, accusing him of being a bloody ignoramus.[1] For details see my study on smallpox vaccination.[2] Goelis was more than right. He was the first to appreciate the time restricted immunity of a single smallpox vaccination, twenty to twenty-five years prior to other physicians. There was a severe epidemic of smallpox at first in Scotland in 1817-1818, then in England in 1819, and finally in Ireland in 1821 involving plenty of vaccinated individuals. In Austria the epidemic started in 1817 to spread to Vienna in 1819. It took however ten more years until the physicians could be convinced that a second vaccination, followed eventually by later ones was necessary. The official recognition of the necessity of revaccination was not admitted in Austria until 1836.[3] In the army of Würtemberg revaccination was made obligatory in 1825. These facts are well recorded in the History of Vaccination of Bohn, 1875 (in German), without any mention, however, of the name and achievements of Goelis. It may be emphasized that Goelis was the first physician concerned with unduly severe postvaccinal reactions; he studied their causes and tried to find methods to avoid them.

In 1811 Goelis issued a pamphlet, entitled *Vorschläge zur Verbesserung der körperlichen Kindererziehung der ersten Lebensperioden* published by Anton Kraus, second edition in 1823 by Karl Gerold, both in Vienna. In spite of the fact that this is a popular booklet and not a scientific paper, one must admire the astonishing intuition of the author, who without any inkling of the coming progress of biochemistry and physiology, is several decades ahead of his epoch. No wonder that his contemporaries, even physicians, were unable to appreciate the ideas and suggestions of the author and therefore even this booklet was soon forgotten.

[1] Meeting of the Members of Faculty, June 12, 1811, see *Oesterreichische Medizinische Jahrbücher*, Volume I, pages 81-159.

[2] *Wiener Medizingeschichtliche Beiträge*, Vol. III, 1937, Vienna, Ars Medici.

[3] Official orders for vaccination and revaccination dated July 9.

Goelis wrote in 1808 a monograph in Latin entitled: *Tractatus de rite cognoscenda et tractanda angina membranacea.* Napoleon of France donated a prize for the best paper to be written in a competition on the question of the diagnosis and treatment of diphtheria. Professor Dr. L. Jurine, College of Medicine of the University of Geneva (Switzerland) succeeded in winning the prize, while Goelis was placed second. Jurine collected only 91 cases from the death register of his native city (having in this time not more than 23,000 inhabitants), which represented the material of sixteen years. Goelis was able to report on 255 cases he had observed personally within twelve years and even added 84 cases observed carefully by his assistant and coworker Treber, thus all in all 339 cases. Although the monograph did not add any important data to the knowledge of diphtheria of the epoch, the description of the symptomatology of the disease is classical and reminds us in many respects of the pioneer work of the famous Frenchman Bretonneau, some twenty years later, on the diphtheria of the larynx.

The most outstanding achievement of Goelis is his *Praktische Abhandlungen über die vorzüglicheren Krankheiten des Kindesalters.* The first volume was issued in 1820 by Karl Gerold in Vienna with the title: *Von der hitzigen Gehirnhöhlenwassersucht.* The second volume issued by the same publisher had the headline: *Von innerem, chronischen Wasserkopfe und von den verschiedenen Arten des äusseren Wasserkopfes.* The first volume was dedicated to the memory of his late assistant and friend Joseph Georg Treber (his coworker of his monograph on diphtheria), while the second volume to the Baron Stifft, the mighty court physician of Emperor Franz and Head of the Health Department of the Imperial Austrian Government. Goelis describes here almost in a classical manner and style the onset, symptomatology and development of the tuberculous meningitis. Sixty years prior to the discovery of the tubercle bacilli, the author of course could not appreciate the etiological difference between tuberculous and purulent meningitis. He differentiates however "Wasserschlag" from "Gehirnhöhlenwassersucht." The first term means what we now call tuberculous meningitis, while the second term corresponds to liquor accumulation on account of an acute meningitic process. Goelis succeeded in furnishing the evidence that there are two kinds of inflammatory processes of the meninges, one characterized by exudation of pus, the second by the exudation of a clear transparent fluid. To do this, he had to perform careful autopsies. He reports on 37 autopsies. Having no hospital at his disposal, he was obliged to perform the post-mortems

either in the house of the deceased after getting the agreement of the relatives, or to go to the City morgues, which were in this time like sties. In this time Karl Rokitansky, the founder of Viennese Pathology, was in his childhood. Without ardent, unselfish enthusiasm for scientific progress such a self-sacrifice is hardly imaginable. It is a pity that the autopsy protocols of Goelis were lost soon after his death.

A few quotations may help to understand better the achievements of Goelis: "Der Wasserschlag endet, wie ich schon gesagt habe, immer mit dem Tode, die hitzige Gehirnhöhlenwassersucht ist meistens tödlich und geht selten in die Genesung, oder in eine andere Krankheit, als Blindheit, Taubheit, Blödsinn, Fallsucht, halbseitige Lähmung, welchen Leiden immer frühere, oder spätere Auszehrung folgt, und in chronischen Wasserkopf über." In the first Handbook of Pediatrics in German, edited by Karl Gerhard in 1878-1882, I failed to find any statement or quotation connected with the name of Goelis. Goelis describes very distinctly tuberculous nodules which he found at autopsies, without drawing any conclusions from these findings. The anatomical differential diagnosis of purulent (probably epidemic) and tuberculous meningitis is, however, well described with some hints for clinical differential diagnosis. Goelis' monograph is the first description of the diseases of the meninges with an attempt to give a critical survey and a clear evaluation of all facts observed at the bedside and discussion of literature known in this epoch. The monograph is, in spite of all progress in our knowledge during 120 years still very interesting to a historically and critically minded physician. Unfortunately a sudden, untimely death prevented Goelis from continuing his promised series of monographs on the important diseases in childhood.

I have tried to describe briefly the life work of a man, zealously fond of progress in Medicine and particularly in Pediatrics, who being decades ahead of his epoch, was not understood by his contemporaries and was soon forgotten after his death. Although he had many pupils and assistants during his lifetime, to mention Treber, Goetz, Adelt, Faber, and Watzl, they were not scientists and did not publish papers of value.

Goelis was the first great Viennese Pediatrician, later to be succeeded in his Dispensary by Loeschner, Pollitzer, Kassowitz and Hochsinger, and a large group of clinicians, such as Mauthner, the first clinical professor of Pediatrics of the University of Vienna, and many others. Vienna, the center of a large empire, which was severely hit by the dissolution of the old Habsburg Empire in 1918, recovered after a few years, at least as far as scientific research was concerned. The real blow came in 1938 with

the Nazi invasion, which made of the ancient center of the " Holy Roman Empire of German Nations " and later metropolis of the Austrian Empire a mere provincial capital. Personalities like Goelis with individual opinions were expelled or jailed. The spirit of the old charming city is alive however, and no one who was educated in the Alma Mater Viennensis can forget the atmosphere of old tradition and unselfish enthusiasm for scientific progress. This paper has been written in grateful memory of all pioneers of the Viennese School of Medicine by an old alumnus of the Alma Mater Viennensis. While almost all representatives of the School are well known and appreciated, Goelis is one of the few forgotten pioneers. To pay due homage to his memory, this paper has been written.

Photograph of Grandma Heath from "My Second Life" by Dr. Thomas Hall Shastid, page 441.

UNIV. OF MICH.

LIVER THERAPY ADVOCATED DURING THE LAST CENTURY FOR THE ANEMIAS

A. L. SKOOG

Recently a book, which probably should be better known to the medical profession than is the case, has fallen into my hands for a review. Several pages of this voluminous work is devoted to a lady who used and advocated liver therapy in the anemias, which undoubtedly included a number of cases of pernicious anemia. I am referring to *My Second Life* by Thomas Hall Shastid, A.M., M.D., L.L.B., Sc.D., F.A.C.S., F.A.C.P., etc. The book came off the press of George Wahr, of Ann Arbor, Michigan in 1944.

The writer of this volume descended from a medical family, practising in Illinois. The father of the author of the book was Dr. Thomas Wesley Shastid, born near New Salem, Illinois, in 1831. His first acquaintance with Grandma Heath was during his early years of instruction, when he attended her school. " Granny Heath " had seen much of frontier life in Ohio and Illinois, had received a considerable amount of education for pioneer days, and was rated as quite intelligent. Thomas Wesley Shastid received his M. D. degree from the Medical Department of the University of Missouri on February 28, 1856. He soon returned to Pittsfield, Illinois, where he practised most of the time until his death. Descriptions of the man indicate that he did a great deal of good and was highly respected in the community. He had a favorable rating by his colleagues and was decidedly ethical. His moral and ethical trends may have prevented the use or even experimentation with liver in the treatment of anemias, about which " Granny Heath " had talked to him at length on a number of occasions.

Dr. Thomas Hall Shastid, the author of this book, was born at Pittsfield, Illinois in 1866. He received his early education there, much of it from Grandma Heath. He acquired a good medical education and studied in several leading medical centers in Europe. Soon after his return from abroad to Illinois, he devoted his practice to ophthalmology.

Quotations from " My Second Life " throw some light on Grandma Heath and her reasons for recommending liver for the treatment of the anemias. She used her own nomenclature for some medical terms.

On page 441, there is a good likeness of the lady and some descriptive

matter as follows: " Mary (Nancy) M. Heath, whose maiden name was Dunbar, was born January 1, 1791 (some say 1785), the first white child born in Cincinnati. She was brought up by Governor McArthur, of Ohio, and in 1813 was married to Wm. Jonathan Heath, physician. Soon after her husband's death in 1825, she rode on horseback from Marietta, Ohio, to Naples, Illinois, where she taught the first school in that town. In 1834, the year the town of Pittsfield was laid out, she removed to that village, where again she taught the first school. She was also the first teacher of my father and of Dr. Thomas Worthington, the first physician in Pittsfield." Dr. William Jonathan Heath was a Captain and surgeon in the War of 1812.

We gather from this book that Mrs. Mary M. Heath was quite a bright woman, who was definitely eccentric on occasions and had a determined mind. This type of an individual, especially in her more mature years, might readily consider herself an adviser to individuals in the community. This included medical advice in the early days. She had a number of other remedies to recommend for several diseases besides the one for anemia. One was labeled " Guarantee of Long Life." and possibly she took this medicine herself, as she is said to have lived to the age of 96. However, a number of her ancestors were noted for longevity.

I am quoting from the book as follows (pp. 444-445): " Especially I recall her remedy for anemia, or ' littleness of the blood.' That was merely liver, cooked liver or raw; liver of sheep, liver of lamb, liver of cow or chicken or pig—no difference, liver of any sort was good. When all other things had failed, she found ' by actual tryin' ' that the best medicine for ' littleness of the blood ' was liver, especially the liver of beef or of pig. She recited numerous cases wherein doctors had failed to cure anemia and in which her copious liver diet had succeeded to the limit."

The elder Dr. Shastid himself, evidently never tried the liver therapy for anemias. To quote him: " Well, I've known such cases in her hands to get well, but, more than likely, they would have got well anyway." This scientific doctor of an early day in Pittsfield just smiled when Grandma Heath suggested to him to try the liver diet for " littleness of the blood." She also stressed that: " The butchers don't charge anything for liver why not try it?" Thus we cannot but regret that Dr. Shastid did not try liver therapy for the anemias. He overlooked a golden opportunity in the practice of medicine. Thus he missed the chance of being the first physician to report on liver therapy for the anemias. Medical

history, now almost a century later, has bestowed upon Dr. George R. Minot and Dr. William P. Murphy, the credit for first successfully using liver in pernicious anemia.[1]

The report above should not detract from the honor bestowed upon Drs. George R. Minot, William P. Murphy and George H. Whipple for their rediscovery of liver therapy for pernicious anemia and establishing it upon a scientific basis. They utilized in their researches the modern knowledge of blood chemistry and histology. The two scientists were entitled to the Nobel Prize granted in 1926 for their discovery.

It was about the middle of the 19th century when Thomas Addison and Anton Biermer wrote about and established definitely the entity of pernicious anemia. Very likely their work was unknown to the people living on the frontiers of Illinois at that time, including the physicians.

It is interesting to note that other organs in the abdomen were recommended by Grandma Heath in the treatment of the anemias. Shortly following the publications of Minot and Murphy relative to liver therapy, other workers in the field of anemia discovered that several abdominal tissues could be used successfully, including especially the walls of the stomach.

Accepted medical discoveries by laymen are not new to the history of medicine. A number of citations could be given, one of the best known being smallpox vaccination. A young English physician, Edward Jenner, is credited with the discovery of vaccination for variola. His first inoculation of cow-pox was made in 1796. However, English farmer folk had known for centuries before that cow-pox prevented small-pox. Jenner as a medical student was attracted to these lay stories.

[1] Minot, George R. and Murphy, William P.: Treatment of Pernicious Anemia by a Special Diet, *Jour. A. M. A.* 87: 470, Aug. 14, 1926.

MEDICO-HISTORICAL NEWS AND ACTIVITIES

AMERICAN ASSOCIATION OF THE HISTORY OF MEDICINE

The Annual Meeting will be held on May 26-27, 1946 at the Hotel Claridge, Atlantic City, N. J. There will be a meeting of the Council at 3 p. m., Sunday, May 26, to which all members of the Association are cordially invited. On Monday, May 27, there will be morning and afternoon sessions, including the Garrison Lecture, a symposium commemorating the 200th anniversary of the birth of Benjamin Rush, and miscellaneous papers. The annual dinner will be held at the Claridge in the evening. *Members who wish to present papers are asked to communicate with the secretary*, Dr. W. B. McDaniel, 2d, 19 S. 22d Street, Philadelphia 3, Pa., *before April 15.*

Room reservations should be made as soon as possible and the requests sent directly to the Hotel Claridge, Atlantic City, N. J.

CONSTITUENT SOCIETIES

The Beaumont Medical Club, New Haven, Conn.

The Beaumont Lecture for 1946 was given by Colonel Harold W. Jones of the Army Medical Library on February 22, 1946 at the Historical Library, Yale University School of Medicine.

Institute of the History of Medicine, The Johns Hopkins University

The eighth course of the Hideyo Noguchi Lectureship was held at the Institute of the History of Medicine on February 19, 20, and 21, 1946 with Dr. J. M. D. Olmsted, Professor of Physiology at the University of California, as Lecturer. The general subject of the course was *Charles Edouard Brown-Séquard, a Nineteenth Century Neurologist and Endocrinologist.* The program was as follows:

February 19: "Mauritian student and free-lance investigator in Paris."
February 20: "His neurological practice and American professorships."
February 21: "In the Chair of Medicine at the Collège de France."

The lectures will subsequently be published by the Institute of the History of Medicine as Volume V of the Hideyo Noguchi Series.

NATIONAL NEWS

Army Medical Library

Army Medical Library News reports that Major Thomas E. Keys, who organized the Cleveland Branch of the Army Medical Library, has been separated from the Army and will resume his former position as Librarian of the Mayo Clinic Library. At the beginning of the war the most valuable books and documents of the Army Medical Library in Washington were removed to Cleveland for safekeeping, and a program of binding and restoration was instituted. More than 50,000 early

medical books and documents have been repaired or rebound. To replace Major Keys, Dr. Max H. Fisch, formerly Curator of the rare book collection, has been appointed Chief of the History of Medicine Division, the name given to the Cleveland Branch.

Some time ago, the Library was able to purchase what is probably the most complete collection of the works of the deceased ophthalmologist and historian of Arabic medicine, Max Meyerhof in Cairo. It consists of books, pamphlets, reprints of articles and book reviews. The *Bulletin* will publish in one of its next numbers a biography of Dr. Meyerhof with a bibliography and critical analysis and appreciation of his works by Dr. Claudius F. Mayer, editor of the Index Catalogue. This study, we feel sure, will be much appreciated, and it is an excellent example of how a great library should not only collect and accumulate materials but publish and evaluate them for the benefit of scholars.

Medical Library Association Convention

The Medical Library Association will hold its post-war convention at the Yale Medical Library, New Haven, Conn., March 25-27. The program will include papers on the history of medicine in Connecticut by Dr. Herbert Thoms and Dr. Harold S. Burr, on the libraries of Yale University by Mr. J. T. Babb, Dr. John F. Fulton and others. Dr. Sanford V. Larkey will speak on his experiences as medical historian of the European Theatre. Miss Ethel Wigmore of the National Institute for Medical Research will discuss British and continental medical libraries. There will also be reports on the reorganization of the Army Medical Library by members of the library staff and general discussions on interlibrary and international cooperation. Training for medical librarianship is the subject chosen for the presidential address by Miss Mary Louise Marshall. The speaker at the annual banquet will be Prof. Em. C. E. A. Winslow. Headquarters: Hotel Taft. Secretary: Miss Frida Pliefke, 2000 Medical Arts Building, Minneapolis, Minnesota.

Columbia University

On February 4, 1946 a course of lectures on the French and the American Revolutions was inaugurated. The course was organized by Professor Mirkine, president of the Société d'Histoire de la Révolution Française. The course will include a discussion of science and medicine at the period. On April 8, Léon Brillouin will speak on " Science during the Revolution " and on May 6, Raymond de Saussure will discuss " The French Revolution and Medical Thought."

NEWS FROM ABROAD

Italy

From a letter of Professor Oscar Scaglietti, director of the Rizzoli Institute in Bologna to Dr. Henry R. Viets, we learn that the Institute Rizzoli, located in an old monastery, has not been damaged but that the place has been completely pillaged by German troops. Professor Putti's famous collection of books [*Bull. Hist. Med.*, 1945, 17: 421] was saved because Professor Scaglietti was able to remove it and hide it in time. We also hear that Cortina Hospital is not damaged either.

Sweden

The Johns Hopkins Institute of the History of Medicine has received the volumes 24-28, 1941-1945 of *Svenska Linné-Sällskapets Arsskrift*, the yearbook of the Swedish Linnean Society. We are happy to know that the yearbook. one of the foremost publications in the history of science, has weathered the storm of the war years and was able to maintain its high standard in the quality of the papers as well as in its physical appearance.

U. S. S. R.

The Soviet periodical, *Priroda*, a monthly popular journal of natural history published by the Academy of Sciences of the U. S. S. R. has devoted Number 3, 1945 to the commemoration of the 220th anniversary of the Academy of Sciences of the U. S. S. R. [1725-1945]. The journal contains a series of very interesting articles discussing the development of the various fields of science in Russia during the last 220 years.

Meditsinski Rabotnik of November 15, 1945 reports that on behalf of the Central Medical Library, Dr. V. V. Khizhnyakov prepared a bibliography of the works of the Russian surgeon, N. I. Pirogov, and of the literature about him. "The bibliography includes literature published from 1911 to and including 1944. The literature previous to 1911 is listed in the bibliographical studies on the subject by Fomin and Shingarev. Unlike other indices, the description of books and articles is given by V. V. Khizhnyakov with annotations. All descriptions have been made *de visu* with very few exceptions.

The bibliography is organized systematically in 9 sections:

1. The works of N. I. Pirogov, his letters, lecture notes, circulars, etc.
2. Articles and bibliographical materials about him.
3. N. I. Pirogov as a surgeon and anatomist.
4. Educational ideas of the great surgeon and his activities as a protector of the field of education.
5. Religious and philosophical views of N. I. Pirogov and his personality.
6. I. N. Pirogov at his estate in the Podolski Province.
7. Honors, obituaries of the founder of military field surgery, institutions named after him.
8. Popular editions of N. I. Pirogov.
9. Short notes."

Dr. Vladimir Ivanovich Rudnev, professor at the Samarkand Medical Institute in Uzbekistan, recently celebrated his 75th birthday and the 50th anniversary of his scientific, academic, and medical activities. Professor Rudnev is particularly well known for his translation of the Hippocratic writings into Russian on which he worked for many years. The translation was published in 1936 by *Biomedgiz* in the collection, *Classics of Biology in Medicine*.

BOOK REVIEWS

LEO W. SIMMONS. *The Role of the Aged in Primitive Society.* New Haven: Yale University Press, 1945. 317 pp. $4.00.

Unless the atomic bomb reverses demographic trends entirely, one-third of our population will be older than 45 and one-tenth older than 65 in less than 15 years. Preoccupation with the physical, psychological, and social aspects of old age is, therefore, one of the most urgent tasks of science and social planning, a task so far undertaken by only a few. Professor Simmons' excellent book, the first in English on old age among primitives and the only one in the world except John Koty's *Die Behandlung der Alten und Kranken bei den Naturvölkern* (Stuttgart, 1933), should be of inestimable value to all sociologists and psychologists studying the problems of old age. Only those who know the scantiness of the data available can fully appreciate the difficulties the author had to overcome and the magnitude of his accomplishment.

On the basis of information collected by Professor Simmons, it seems that only few primitives ever attain old age, and the number of persons reaching 65 perhaps rarely exceeds three percent. A comparison of the author's material with other work on primitive vital statistics (Wissler, Clements, Powdermaker etc.) would have been interesting. It would confirm that the fundamental demographic situation in primitive society differs considerably from our own. The custom of food-sharing in primitive societies, and the tabooing of numerous foods for the young but not for the old are great assets for the aged in their struggle for survival. Property, the disposal of which is delayed till the last moment, is another weapon in the hands of the aged. They fortunately enjoy considerable prestige in most primitive societies, and such prestige is upheld by the traditional tales and myths of the tribe. When physical and mental decline exclude the old from such strenuous central economic activities as hunting, tilling the soil, etc., they are still able to carry on a great number of minor, but valuable activities around the camp and house.

Yet security of the old depends far more "upon their wits than their works." Story-telling, the leading of dances, and other forms of entertainment, extremely important in societies lacking books, radios, movies, etc.; experienced political leadership, control of secret societies; transmission of knowledge; practice of magic; observance of religious rites are often preponderantly in the hands of the aged. In primitive societies the family structure provides a fundamental organizational basis for the care of the old as it no longer exists in our small family world.

This is only a brief and sketchy summarization of the points carefully investigated and documented by the author, together with all their ramifications. In a last chapter "Reaction to Death," after an interesting excursion into the disbelief of primitives in natural death, he touches the crux of the matter: What becomes of the old when they are decrepit, when most of the adaptive mechanisms will no longer function? (The ratio of decrepit among the old is unknown for primitive as well as other societies.) This problem is solved by a great variety of methods. There is no doubt that many primitive societies resort not only to abandonment,

but to exposure, actual killing, or institutional suicide. Dr. Simmons concludes from his material that these practices are due to "the hardness of primitive life, not the hardness of savage hearts."

The author's methods are interesting. He has not taken his examples at random, but from 71 tribes where enough information exists to differentiate between the treatment of both sexes and to correlate statistically general cultural traits (economics, family system, etc.) with the fate of the aged. We should emphasize the author's statement that "71 tribes are too few to justify placing overmuch reliance upon any single statistical coefficient." Even statistical treatment will probably never eliminate a certain interpretive subjectivism. I feel, for instance, that the evolutionist approach of the author is perhaps more a consequence of the Sumner-Keller tradition than of his statistics per se. It also seems to me that the author at the start more or less assumed good treatment of the old, and thus was less aware of the deep ambivalence pervading the attitude towards the old in all societies. Though in many respects Dr. Simmons' book is far superior to the earlier one of Koty, which he unfortunately never discusses, on this particular point I feel that Koty's point of departure was the more fruitful one. Such critical remarks, however, should not obscure the fact that we owe thanks to Dr. Simmons for a much needed, original, thoughtful, and rich pioneer study of a most interesting subject.

ERWIN H. ACKERKNECHT

E. WAGNER STEARN and ALLEN E. STEARN. *The Effect of Smallpox on the Destiny of the Amerindian.* Boston: Bruce Humphries Inc., 1945. 153 pp. 2 tables. $2.50.

Infectious diseases were undoubtedly far more effective than weapons in killing off the original inhabitants of this continent during the period of the white conquest. Among these imported pests, smallpox undoubtedly was the most dreaded and the most deadly one. Thus it was an excellent idea of the Stearns, a bacteriologist and a chemist respectively, to deal with the history of smallpox among the Amerindian in a special volume.

The authors have collected a tremendous amount of documentary material on the occurrence of smallpox, extending from the 16th into the 20th century. They have brought together most interesting data on vaccination among the Indians, their long resistance to this salutary measure, and their eventual compulsory inoculation on government reservations—a vaccination more thorough than among their "free" white neighbors.

As far as the collecting of material is concerned, the study is most praiseworthy and interesting; but it is to be regretted that the authors have done little beyond collecting the evidence and made only few attempts to integrate their nosological data as it has been done so well, e. g., by S. F. Cook in his local studies of the Californian Indians. The documentation covers almost exclusively the North American Indian. Yet, for a proper understanding of the problem, the greatest possible amount of South American data is absolutely necessary as there is little

reason to believe that South American Indians were less exposed to smallpox, while the demographic trends among the Indians have been very different in both parts of the hemisphere. Too little is also said about comparative morbidity and mortality of white settlers who, still all through the 19th century, suffered extensively from smallpox. No critical comments are made concerning the appalling death rates recorded, though it should not be overlooked that numerical expression of earlier writers cannot be taken too literally, especially if they are based on the affirmations of savages who, in general, do not operate with numerals beyond 100 and often less. Only the observance of these and other precautions will allow us to assess accurately the role of smallpox in the conquest of the Indian—an attempt which most certainly should be made. Important immunological problems are involved in this historical event.

The influence of smallpox on the Amerindian's fate is one of the model test cases for the much discussed question of the role of disease in history. A definitive judgment will be possible only after a thorough examination of all aspects of the problem. The material offered in this volume makes it obvious that smallpox facilitated the conquest tremendously. Yet one cannot help feeling that the role of smallpox did not go beyond these limits; that even without the disastrous consequences of the importation of smallpox, the red man was doomed in his fight against the white.

ERWIN H. ACKERKNECHT

GALEN. *On Medical Experience*. First edition of the Arabic version with English translation and notes by R. WALZER. Published for the Trustees of the late Sir Henry Wellcome by the Oxford University Press, London, New York, Toronto, 1944. xi + 164 pp.

A considerable part of those of Galen's writings which were lost in their Greek original, have been preserved in medieval Latin or Arabic translations. Of the present treatise, *On Medical Experience*, a short part of a Latin translation was printed in the 16th century, while fragments of the original Greek version became known in 1901. Then, in 1931, Dr. H. Ritter discovered a complete Arabic translation in the Cod. Aya Sofya 3725, fol. 135 b–182 b. But this Arabic version itself represents a retranslation. The Greek original had first been rendered into Syriac by Ḥunain ibn Isḥāq (809-877), the greatest of all the translators of the Arabic realm, and was then turned into Arabic by the latter's nephew, Ḥubaish ibn al-Ḥasan al-A'sam, some time after 863. It is this Arabic text which Walzer has used in preparing the present edition and translation.

In his preface, Walzer, in addition to the above sketched history of the text, supplies us with some data concerning the composition, content and significance of the work itself. Galen wrote the treatise at his native Pergamum as a young man not yet quite 21 years old.[1] It reproduces a discussion actually held between the Dogmatist Pelops, and the Empiricist Philippos (cf. p. viii f.). In the treatise,

[1] This is based on Galen's statements in "De libris propriis," ch. 2 (*Scripta minora*, vol. 2, ed. I. Müller, Lips., 1891, p. 97); cf. Walzer's preface.

Pelops' place is taken by a dogmatist who uses arguments similar to those with which Asclepiades (about 80 B. C.) was wont to attack reliance upon experience in medicine. The empiricist not only refutes these attacks but obviously carries the day. The unbiased presentation of the empiricist's speech—by far the longer of the two—is important to the modern student of Greek thought. All of the writings of the empirical school having been lost, this speech, as Walzer points out, is representative of a type of medical writing that played a great rôle in ancient medicine.

From the point of view of medical history proper, it can be said that this Galenic work offers an interesting insight into the contrast between ancient and modern medical science. In following the dialectic arguments on both sides, the reader may sometimes forget that he is dealing with a medical work at all. The details of these arguments, e. g. that about the so-called "sorites," will probably interest the historian of philosophy more than the historian of medicine. Moreover, as far as the attitude of the two schools towards strictly medical problems is concerned, this treatise does not add much to our knowledge. But just because of all this, the fact stands out very clearly that the differences between the ancient medical schools were, above all, of a philosophical nature.

There still remain some questions in relation to the present work which will have to await future clarification. As already stated, the book was written before Galen went to Smyrna to study with the physician Pelops. Furthermore, Galen informs us,[2] the treatise was composed as a private exercise without any intention of publication. But in the opening chapters of the treatise itself Galen addresses himself to his readers and promises that a careful perusal will help them to understand more easily his previous work "On the best sect" (p. 87, 2-4). Moreover, he states that medicine has to employ both "logos" and experience (p. 85, 1). Yet the outcome of the ensuing disputation represents a downright refutation of the "logos" by the empiricist who shows the impossibility of drawing valid conclusions as to the hidden causes underlying natural phenomena. If we try to combine these data we obtain the following picture. As a young man, before having started on his prolonged travels, Galen witnessed a disputation (where?) between Pelops and Philippos in which the latter obviously was victorious. He wrote a more or less objective account of this disputation, intended as a private exercise, yet garbed as an address to some fictitious readers. All this time, however, he was convinced that the logos was of the same importance as experience and that Philippos, though he had successfully defended experience against the exaggerations of Asclepiades and those misguided by him (Pelops among others!), had not really defeated the basic tenets of dogmatism. Shortly afterwards he went to Smyrna to become the pupil of the defeated Pelops. If correct, this somewhat puzzling picture would tend to show that Galen's medical philosophy did not change essentially throughout his life, and that his studies abroad increased his knowledge but influenced him little otherwise. However, this reviewer cannot entirely avoid the impression that the opening chapters (I and II) of the present treatise were revised by Galen himself later in his life and that such a late edition served as the text for the Syriac and subsequent Arabic translations.

Regarding the text of the present edition, it has to be kept in mind that it rests

[2] Galen, "De libris propriis," *l. c.* (see footnote 1).

on one manuscript only, which, moreover, is written in a badly punctuated script without vowels (Walzer, p. vi). Under such circumstances, mistakes resulting from writing errors could hardly be avoided, particularly as regards personal names. Thus in chapter XXX, 7, as Walzer himself states (p. 164), "Asclepiades" was written instead of "Asclepius." The obvious occurrence of such mistakes has some bearing on the identification of the name Diogenes. This name occurs three times. In the first instance (ch. XXII, 2), as Walzer says (cf. p. x, note 4, and p. 161), it refers to the cynic philosopher. The other two instances Walzer interprets as referring "to Diogenes (of Apollonia) as a physician" (p. x). But in one of these two places (ch. XXII, 3), the Arabic text has دويوقلس which can be more easily read as Diocles; and in the other place (ch. XIII, 4) the names of Diogenes and Diocles follow directly upon each other, so that the suspicion of a scribe's mistake, writing Diogenes first and then correcting it into Diocles, cannot be dismissed altogether. The present treatise, therefore, does not present an unquestionable basis for considering Diogenes of Apollonia a physician.

In preparing his translation, Walzer refrained from reproducing the great prolixity of Ḥubaish's diction (cf. p. vii). For this, most readers will be grateful to him. The difficulty of the whole task, particularly in its more strictly medical parts, is evidenced by the fact that in spite of Walzer's command over classical medical literature, several passages have remained obscure.[3]

In conclusion it may be said that Walzer has performed a considerable service to all those interested in the works and thoughts of ancient medicine and that the Trustees of the late Sir Henry Wellcome are to be thanked for making this scholarly publication possible.

O. Temkin.

William Clowes. *Profitable and Necessarie Booke of Observations.* With Introductions General and Medical by De Witt T. Starnes and Chauncey D. Leake. Scholars' Facsimiles & Reprints, New York, 1945. xxviii + 229 + [3] pp. $6.00.

William Clowes belongs to the group of British surgeons of the Elizabethan period who pursued surgery as an honest craft and tried to improve it by keeping up with the medical literature of their day and learning from their own observations. Clowes' works are particularly remarkable for the case histories which give a colorful picture of daily life in Elizabethan times. Clowes' main work was "A prooved practise for all young Chirurgians." First published in 1588, re-edited in 1591,[4] it was considerably changed in 1596 and published under the title "A Profitable and Necessarie Booke of Observations," together with his short treatise "On the cure of Lues Venerea."

[3] In ch. XXIV, 6, the understanding could perhaps be improved by translating *qaiḥ* by the more literal "pus" instead of "abscess." The argument would then be that the appearance of pus after incision with a knife refutes those who denied the presence of pus in the bladder.

[4] There is a copy of the 1591 edition in the William H. Welch Medical Library which is not mentioned in the bibliographical note, p. xxii.

In choosing the 1596 edition for Scholars' Facsimiles and Reprints, the editors gained some new material not included in the old edition (e. g. "An admonition to the friendly Reader," p. 221), but they also sacrificed some, particularly "The Epistle to the Reader," so full of cultural interest, and Banester's preface "To his very good freend, Mayster Clowes Chirurgion, all health, etc."

The facsimile reproduction itself can be called fair. Professor De Witt T. Starnes and Dr. Chauncey D. Leake in their introductions have said all that is necessary for a general as well as a medical understanding of Clowes and the work reproduced. They have not tried to make him a greater medical man than he was. In fact one might even heighten his stature by pointing out that Clowes was one of the very few surgeons of the time to mention amputation of the leg above the knee joint. This account which is important in the history of surgery occurs on page 98 of the present facsimile edition and the passage in question reads: "Not many daies after, the Masters of the said hospitall requested me, with the rest of the Surgeons, to go to High-gate, some three or fower miles from London, to cut off a maids leg, which they had seene in the visitation of those poore spittle houses: the said leg was so greevously corrupted, that we were driven upon necessitie, to cut it off above the knee, which we did performe by the order before prescribed, and he did see, we staied the flux, and lost not much above fower ounces of blood, and so cured hir within a short time after."

The latter example shows that the reproduction of Clowes' work, apart from its cultural significance, will be of value to those interested in the history of surgery.

O. Temkin

A. S. Eve and C. H. Creasey. *Life and Work of John Tyndall.* With a Chapter on Tyndall as a Mountaineer by Lord Schuster, and a Preface by Granville Proby. London: Macmillan and Co., 1945. xxxii + 404 pp. Illustrated.

During the last years of his life, John Tyndall intended to write an autobiography in which task he was to be helped by his wife. After his death, Mrs. Tyndall intended to continue the work in the form of a two volume biography. But although she survived her husband for nearly 47 years, she did not proceed beyond collecting and arranging the material on which the present book is based. It fell on Professor Eve to draft and on Mr. Creasey to revise and complete the work.

The bulk of this biography consists of an account of Tyndall's life and work in chronological order from his birth in 1820 at Leighlin Bridge, Ireland, as the son of a shoemaker and police-officer until his death in 1893 as one of the foremost English scientists of the Victorian age. The authors have not indulged in a psychological analysis of Tyndall nor have they treated him as the product of political, social and economic events of a far remote period. Their attitude is very objective with no attempts at enhancing or belittling his stature. They have largely kept to facts without, on the other hand, renouncing brief and necessary characteristics of Tyndall's attitude to various scientific, philosophical and personal questions. Much of the documentation of the narrative is from Tyndall's journal and that of his friend Hirst as well as from letters and Tyndall's original publications. As a

result the spirit of the age in which Tyndall lived is still preserved—quite properly so in a book that was conceived as an autobiography. True, Tyndall the man is described rather than explained. But it is doubtful whether an autobiography would have revealed a more intimate picture than this work does. Of his journal the authors themselves remark: "It is possible to read page after page of the Journal and then wonder why Tyndall kept it—or Hirst wrote his" (p. 41). Judging from the many entries quoted and assuming that nothing of importance was destroyed after his death, we have to conclude that Tyndall was not able to break through the screen of Victorian reticence. What inner conflicts accompanied the transition from a religious youth to a fervid agnosticism remains unknown. And the reader can only speculate on the causes of his insomnia which made him an addict of hypnotic drugs.

But if we learn more of the outer appearance than of the inner working of Tyndall's mind it must at once be added that the events recorded are interesting enough. It is remarkable how the poor surveyor and school teacher worked his way through to a Ph. D. degree from the University of Marburg. It is no less interesting to see Tyndall involved in many controversies of a rather personal nature often provoked by a sense of justice (cf. p. 283) which impelled him to take sides as, e. g. in his championship of Robert Mayer against the claims of Joule (cf. p. 94 ff.). His friendship with Carlyle, Darwin, Faraday, Hooker, Huxley and his enmity against Gladstone throw many interesting sidelights on men and conditions of scientific life in the England of his time.

Tyndall is remembered as a scientist, a popular lecturer and writer, and a mountaineer. Very conveniently, the authors towards the end of the book have summarized his contributions to physics and biology, and his style and influence as lecturer and writer. Tyndall the physicist was mainly concerned with problems of magnetism and radiation. Investigations in the latter field stimulated his interest in the microorganisms floating in the air, their biological significance and the means of destroying them. This, in turn, led him to take a strong stand against spontaneous generation. That is to say, the experimenting scientist Tyndall did his best to disprove all evidence in support of spontaneous generation, whereas the philosophizing scientist Tyndall *believed* in the historical origin of life from matter. This contradiction, clearly brought out in his Belfast address in 1874 as President of the British Association for the Advancement of Science, apparently created quite a stir (cf. p. 183). It was indeed a peculiar position for a man who professed agnosticism where belief was opposed to scientific experience.

In acknowledging Tyndall's agnosticism, the authors state: "He was not, in the proper sense of the word, irreligious. He was not at war with religion, and he was not an atheist, as he was so often called" (p. 283). And they add that "his attitude of mind was really Pantheistic" (ibid.). On the basis of the present biography itself and without going into the details of his philosophical tenets, it can be said that Tyndall far from being irreligious preserved the religious fervor of his family (cf. p. 271). Speaking of Faraday, he said: "To me, in a scientific sense, his lecture was like the talking of Christ to the woman of Samaria" (p. 51). And in a letter to Faraday he thinks "that the qualities which go to constitute a good Christian are those essential to a man of science, and that above all things it is necessary for him to become 'as a little child.'" (p. 53). He envied two "Methodist

fanatics" for something he lacked (p. 70). He believes that he too, though by a different approach, could refresh his soul for the week as Faraday does by his Sunday exercises, and that he ought to give more attention to "what in the New Testament is called 'faith'" (p. 36). In the face of these remarks, is it not permissible to suggest that Tyndall's repeated trespassing beyond strict science expressed a religious urge and that at heart, if not in dogma, he remained a Christian?

Tyndall, the student of radiation and of glaciers, was also a very courageous and successful alpine mountaineer. This aspect of his activities is taken up by Lord Schuster, set against a background of the history of mountaineering in its heroic age of the 50's and 60's. This section makes fascinating reading and closes (apart from the index) a volume which represents a remarkable chapter in the history of science and its philosophy.

O. TEMKIN

RALPH S. BATES. *Scientific Societies in the United States.* New York: John Wiley and Sons, 1945 [A Publication of the Technology Press, Massachusetts Institute of Technology]. viii + 246 pp. $3.50.

In this book, Dr. Bates has chosen "the history and the influence of the scientific societies of the United States" (p. iii) as his theme. The history is traced in four chapters dealing with Scientific Societies in Eighteenth Century America; National Growth, 1800-1865; The Triumph of Specialization, 1866-1918; and American Scientific Societies and World Science, 1919-1944. A fifth chapter on The Increase and Diffusion of Knowledge is devoted "to a brief analysis of some of the means whereby American scientific societies have augmented and disseminated scientific knowledge" (p. 173). A well arranged bibliography followed by a detailed index close the volume.

To have comprehended a theme with as many ramifications as the present in a relatively small book is no mean feat. Compared with this achievement, the fact that completeness is sometimes bought at the prize of a mere listing of names (cf. e. g., pp. 120, 144, 147) is of very little importance. Moreover, as the headings of the chapters indicate, the author was not satisfied with a bare chronological account, but tried to distinguish characteristic periods in the growth of the scientific societies. The reader is given a background of general developments against which to view the vicissitudes of the American societies during the periods in question. Here again, it is of little importance that some of the resumés of scientific trends and discoveries suffer from a certain sketchiness (e. g., p. 91 concerning medical events between 1866-1918). What really matters is that the history of the leading societies is traced clearly, that most of the other societies are at least mentioned, and that all the events are woven into a coherent and understandable account. Consequently, the book is useful as a work of reference and is stimulating because of its many links with broader issues.

Dr. Bates finished his book in early 1945 when problems of war made an appraisal of current trends and of the future extremely difficult. Yet he takes notice of the fear expressed "lest utilitarian interests capture the general science societies and subvert research to their own ends" (p. 183). The history Dr. Bates

has written proves that pragmatism has been a strong force in the development of scientific societies. *Useful knowledge*, i. e. such as would "tend to increase the power of man over matter, and multiply the conveniences or pleasures of life" (B. Franklin, quoted on p. 6.) was emphasized in all the foundations of the 18th century (cf. pp. 6, 10, 13 and 15). The period of the national growth from 1800 to 1865 saw a strong interest in the various branches of natural history quite characteristic for the opening up of vast new regions. Yet not a single society devoted to the exclusive study of physics was formed during these years (p. 52), whereas the increasing industrialization following the Civil War led to a demand for chemists and physicists by industry and a parallel growth of corresponding societies (p. 99 ff.). All this goes to show that modern science cannot be divorced from the demands of material usefulness. But with the increasing realization of the power of science, the danger has also increased that usefulness become its sole justification. What is to be considered as useful is defined *for* science, not *by* science. And by exclusively adapting itself to external demands, science runs the risk of losing its *élan vital*. Medieval science searched for philosophical truth with but little regard for practical usefulness—which accounts a good deal for its barrenness. Today, the same result threatens from the opposite extreme. It will largely be up to the associations which scientists themselves have formed and supported to preserve a balance of values for themselves, as well as for those who listen to them.

O. Temkin

CONTRIBUTORS TO THIS NUMBER

Dr. ERWIN H. ACKERKNECHT is Assistant Curator of Physical Anthropology at the American Museum of Natural History, Central Park West at 79th Street, New York 24, N. Y.

Dr. WYNDHAM B. BLANTON is Professor of Clinical Medicine at the Medical College of Virginia, Richmond, Va. His address is 828 West Franklin St., Richmond, Va.

Mrs. MARGARET N. BURKE is from the Richmond Academy of Medicine, 1200 East Clay Street, Richmond, Va.

Dr. WILDER PENFIELD is Director of the Montreal Neurological Institute, McGill University, 3801 University Street, Montreal 2, Canada.

Dr. M. PIERCE RUCKER is an obstetrician. His address is Medical Arts Building, Richmond, Va.

Dr. A. L. SKOOG is a neurologist. His address is Suite 919, Rialto Building, Kansas City, Mo.

Dr. EUGENE STRANSKY was formerly from the Department of Pediatrics, College of Medicine, University of the Philippines, Manila, P. I. His present address is 131 Riverside Drive, New York, N. Y.

WILLIAM L. STRAUS, JR., Ph. D., is Associate Professor of Anatomy, The Johns Hopkins Medical School, Baltimore, Md.

Dr. OWSEI TEMKIN is Associate Professor of the History of Medicine, The Johns Hopkins Institute of the History of Medicine, 1900 E. Monument St., Baltimore 5, Md.

FREDERICK C. WAITE, Ph. D., is Emeritus Professor of Histology and Embryology at Western Reserve University. His present address is 144 Locust St., Dover, N. H.